Volunteer Firemen

APRIL

1944

NATIONAL FIRE PROTECTION ASSOCIATION
INTERNATIONAL
60 Batterymarch Street Boston 10, Massachusetts

VOLUME 11, NUMBER 4, COPYRIGHT 1944 NATIONAL FIRE PROTECTION ASSOCIATION PRINTED IN U. S. A.

"It's a good thing we used a FOGNOZL"

Fognozls extinguish almost any type of fire. Quoting from a report of the McCloskey Varnish Co. of Los Angeles, they say, "We did have a fire in our plant, in which Fognozl played a rather important part. In the five minute interval for outside assistance, the fire (varnish kettle) would have gained such headway that a very heavy loss would have occurred. The fire was out by the time the fire company arrived. One man, using a Fognozl, protected the other man. Obviously we are more than completely satisfied with its operation." They, too, think it's a good thing they used a Fognozl.

● **FOGNOZL FACTS**—PREPARE BY ACCUMULATING DATA ON THIS NEW WATER FOGNOZL FIRE-FIGHTING METHOD THAT HAS REVOLUTIONIZED OLD METHODS. FOGNOZL ACCOMPLISHMENTS ARE DAILY EMPHASIZED BY OUR ARMED FORCES

● A BROCHURE OF **FOGNOZL FACTS** WILL BE SENT, WITHOUT OBLIGATION, TO THOSE ENGINEERS OR EXECUTIVES WHO WILL SO REQUEST IT ON THEIR OFFICIAL OR DEPARTMENT LETTERHEAD. IN FOLDER CONVENIENT FOR YOUR FILE

- PROTECTION TO PERSONNEL
  TO FIREMEN AND FIRE VICTIMS
- RAPID EXTINGUISHMENT
  A MATTER OF SECONDS
- REDUCED WATER DAMAGE
  A RATIO OF 1 TO 30
- ECONOMY & AVAILABLE SUPPLY
  PLAIN WATER

GRISWOLD ORIGINAL
WATER FOGNOZL

A PRIZE FOR THE BEST

A prize is hereby offered for the best "still" photographs showing the sequences of extinguishing fires occurring in the United States and Canada, with any of our FOGNOZLS, old style or new. The photographs in this advertisement are a sample. We reserve the right to use any or all photographs for advertising purposes and any sent in are sent to us with this understanding. The only compensation is the prize to the best pictures. The prize? Why a FOGNOZL, of course.

FOG NOZZLE COMPANY

1520 EAST SLAUSON AVENUE ● LOS ANGELES 11, CALIFORNIA

FOG NOZZLE OF CANADA, LTD., MONTREAL, CANADA

MODERN FIRE PROTECTION
a type for most industries

Far-seeing industrialists realize that carbon dioxide, because of its speed in extinguishing fires and its non-damaging effect upon materials and machinery, is a most modern method of protection. Where highly volatile materials are used, C-O-TWO equipment extinguishes fire in split seconds. Turbo-electrical generators that would be ruined by most extinguishing agents are protected with C-O-TWO fixed piping systems that will extinguish generator fires without damage. Fires in oil storage vaults, transformers, spray booths and dip tanks are speedily controlled and put back in service quicker with C-O-TWO equipment. Indeed, in most industries the installation of C-O-TWO fire protection equipment would safeguard materials and machinery against damage by fire and loss of time. All C-O-TWO fire extinguishing equipment employs the use of carbon dioxide, the fastest non-damaging fire extinguishing agent. C-O-TWO Smoke Detecting Systems automatically discover fire the instant smoke appears. C-O-TWO Kills Fire, Saves Lives. It's Safer—It's Faster.

C-O-TWO FIRE EQUIPMENT COMPANY

NEWARK 1 NEW JERSEY

Sales and Service in the Principal Cities of United States and Canada

ILLUSTRATED ABOVE, MACK TYPE 80 750-GALLON PUMPER WITH ENCLOSED PROTECTION FOR 7 MEN

When you're in a hot spot, you're glad it's a Mack that's pumping the water. Then you really appreciate Mack's 32 years of leadership in building fire-fighting equipment that can take it and keep on dishing it out!

Mack

FIRE APPARATUS

If your community needs additional fire-fighting equipment or replacements, think of Mack. Remember, Mack Fire Apparatus is backed by the greatest engineering resources in the industry.

IF YOU'VE GOT A MACK, YOU'RE LUCKY . . . IF YOU PLAN TO GET ONE, YOU'RE WISE!

ARMY E NAVY

BUY WAR BONDS

MACK MANUFACTURING CORPORATION, FIRE ENGINE DIVISION
EMPIRE STATE BUILDING, NEW YORK, N. Y.

Volunteer Firemen

Volume 11 **Number 4**

Published by the National Fire Protection Association, a voluntary non-profit organization, 60 Batterymarch St., Boston 10, Mass.

PERCY BUGBEE	*General Manager*
ROBERT S. MOULTON	*Technical Secretary*
HORATIO BOND	*Chief Engineer*
WARREN Y. KIMBALL	*Editor*
CHARLES S. MORGAN	*Advertising Manager*

The views expressed by the authors of signed articles do not necessarily reflect the views of the N.F.P.A. or the editors of VOLUNTEER FIREMEN.

CONTENTS

For April, 1944

	Page
British Wartime Use of Natural Water Supplies	6
Inadequate Public Protection Contributes to Big Loss	7
Tehachapi High School Fire, by Chief Jack VaHanick	8
The Life of a New York Fireman	10
Fighting Aviation Fires in Nassau County, N. Y., by George W. Clough	12
Hitler's Fire Service	14
Membership Report	16
Cartoon	16
Our Readers Say —	18
The Effect of Fire on Grazing Lands	20
New Text	20
How a Small Volunteer Department Was Organized, by F. W. Dalton	22
N.F.P.A. Executive Office in New Quarters	24
Fire Centenarian Dead	24
Manufacturers' Announcements	26
Index to Advertisers	26

-THE VOLUNTEER FIREMAN

ONE of the most crippling blows struck by fire against our war production effort occurred at Portland, Oregon, on February 2nd, with the destruction of the plant of the Iron Fireman Mfg. Co., manufacturing engines for liberty ships for the U. S. Maritime Commission.

The front cover picture and the photo above (*Del Burkhart, the Oregonian*), make clear the magnitude of this blaze. When first discovered it was "about the size of a bushel basket." The fire started under the wooden floor of an old frame building remodeled for use as a carpenter shop. Beneath the floor was a steam pipe which was in contact with a considerable amount of old lumber and trash.

About 6 P.M. employees noticed smoke coming through the floor. Several men tore up flooring and entered the underfloor space with a chemical extinguisher. The fire was small but was out of reach. One of the men then telephoned to the fire department and another man sounded an alarm from an American District Telegraph Co. call box. This latter alarm was not transmitted because the operator in verifying the call was told that the fire department was already on the way. There was no ADT "Aero" alarm tubing in this underfloor space because it was understood that the entire floor rested on earth fill. This was true of most of the flooring on the basement level. The headway of the fire was not due to a failure of the alarm system but to failure of employees to give the alarm promptly.

The plant including newly erected sections was of flimsy construction, largely frame, without proper cutoffs between sections. Private fire protection was classed as inadequate by the fire department.

The fire was fought by 14 engine, 3 hose, 3 ladder, and 2 fireboat companies, employing a total of 34 streams including five turret nozzles. Off-shift firemen reported to the fire and to various fire stations. O.C.D. auxiliary fire companies were immediately placed in service at all fire stations. The fire department estimates the loss at $1,075,000, or approximately 64% of the value at stake.

The publishers of VOLUNTEER FIREMEN *are making every effort to conserve paper in compliance with the limitation orders of the War Production Board.*

You are cordially invited to attend the

Fifth Annual Volunteer Firemen's Forum

to be held at the

Benjamin Franklin Hotel

Philadelphia, Pa.

Wednesday, May 10, 1944

2:00 p.m.

In connection with the 48th N.F.P.A. Annual Meeting, May 8–11, we are planning an outstanding program for the Volunteer Firemen's Forum. Highlights will be:

1. Dr. W. A. Ross, of the U. S. Office of Education will talk on current aspects of firemen's training. "Art" Ross has participated in firemen's training programs in almost every part of the United States. No more genial personality and charming speaker is to be found among the friends of the fire service. His message is always worth hearing.

2. Fire Marshal George W. Clough will describe the outstanding fire prevention program being carried on by the volunteer fire departments of Nassau County, New York.

3. Herbert A. Friede, Superintendent of Fire Alarms of the District of Columbia is scheduled to talk on the future of the radio in the fire service. No person in the country is better equipped to discuss this problem which will be of major importance to every fire department, both paid and volunteer, in the post-war world.

4. Bill Wunderluch, Financial Secretary, Delaware County Firemen's Association, will tell what the volunteer firemen of Delaware County, Pennsylvania, are doing about training and related subjects.

5. George Ernest Robinson, the nation's outstanding specialist on fire station design will discuss some of the problems involved in planning fire stations. Architect Robinson probably has had more experience in designing fire stations both for large and small communities than any other person. This is a chance for fire departments thinking about plans for a new station after the war to get invaluable instruction.

Many other sessions of the N.F.P.A. meeting will be packed with features of interest to firemen and all firemen are welcome. Be sure that your department is represented by as many men as possible. Programs for the complete N.F.P.A. meeting will be mailed to all N.F.P.A. member departments, and will be sent to other interested persons on request. Volunteer or city firemen in uniform or properly identified are not required to pay a registration fee at the meeting.

EMPIRE STATE BUILDING, NEW YORK, N. Y.

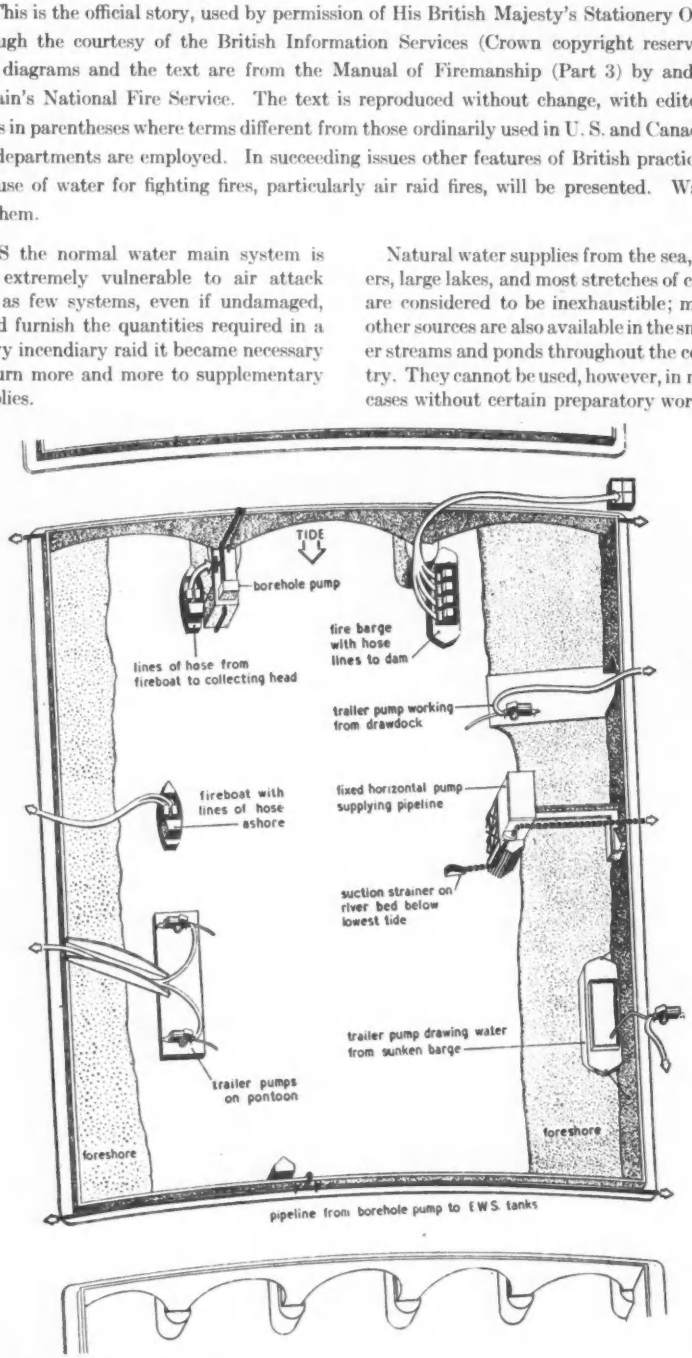
BUY WAR BONDS

British Wartime Use of Natural Water Supplies

This is the official story, used by permission of His British Majesty's Stationery Office through the courtesy of the British Information Services (Crown copyright reserved). The diagrams and the text are from the Manual of Firemanship (Part 3) by and for Britain's National Fire Service. The text is reproduced without change, with editorial notes in parentheses where terms different from those ordinarily used in U. S. and Canadian fire departments are employed. In succeeding issues other features of British practice in the use of water for fighting fires, particularly air raid fires, will be presented. Watch for them.

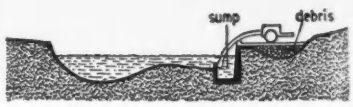
AS the normal water main system is extremely vulnerable to air attack and as few systems, even if undamaged, could furnish the quantities required in a heavy incendiary raid it became necessary to turn more and more to supplementary supplies.

Natural water supplies from the sea, rivers, large lakes, and most stretches of canal are considered to be inexhaustible; many other sources are also available in the smaller streams and ponds throughout the country. They cannot be used, however, in most cases without certain preparatory work.

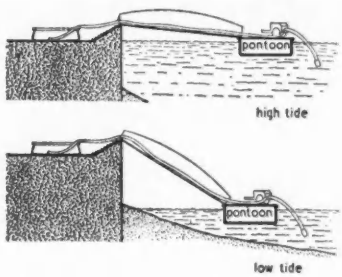

TIDE
borehole pump
lines of hose from fireboat to collecting head
fire barge with hose lines to dam
trailer pump working from drawdock
fireboat with lines of hose ashore
fixed horizontal pump supplying pipeline
suction strainer on river bed below lowest tide
trailer pump drawing water from sunken barge
trailer pumps on pontoon
foreshore
foreshore
pipeline from borehole pump to E.W.S. tanks

Crown copyright reserved. Used by permission.

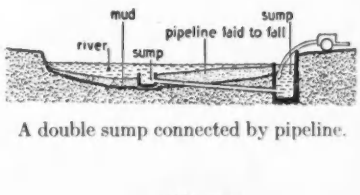
Sketch plan of an imaginary section of a river showing the various methods of utilizing water from a tidal source. Borehole pumps are designed to utilize tidal water which would otherwise be inaccessible to pumping appliances. A valuable supplementary source can be provided in tidal waters by filling barges with water. They are allowed to rest upon a campshed or built-up portion of the river bottom. Thus at low tide the barge remains within the maximum lift of a pump located on the wharf above, while at high tide when the barge is covered, the pump can obtain its supply direct from the river. If the water should be used for fire-fighting purposes, the barge, the capacity of which is usually about 40,000 gals. [50,000 U. S. gals.] must be refilled by a fireboat to prevent it floating.



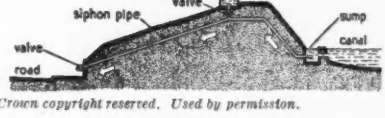
Single sump and standing place.



Trailer pump mounted on a pontoon.



A double sump connected by pipeline.



Crown copyright reserved. Used by permission.

A siphon operating from a canal.

Various forms of equipment may be employed for making use of such supplies of which the following are examples:

(*a*) Borehole Pumps [Illustrated].

(*b*) Emergency Pumping Stations and Siphons [A number of common arrangements are illustrated].

(*c*) River Craft [Fireboats and barges].

(*d*) Sunken Barges [Illustrated].

(*e*) Direct Access to Natural Supplies [Pumps on drawdocks or runways, or on pontoons, as illustrated].

(*f*) Sewer-borne Supplies [Storm sewers].

(*g*) Private Supplies [Railway water tanks, canals, swimming baths and overhead and other tanks of various types].

APART from wharves, roadways and drawdocks, however, water can often be taken from a river or other source at many points where no road is already in existence. The following are three possible methods:

(1) The first is only practicable where the ground leading down to the water is fairly firm and stable. It consists in laying down a roll of chestnut fencing over the mud or sand on which the pump can run down to the water's edge. This method is not to be recommended when other al-

ternatives are possible, for such work is not easy in darkness, perhaps in bad weather conditions, and where speed is imperative.

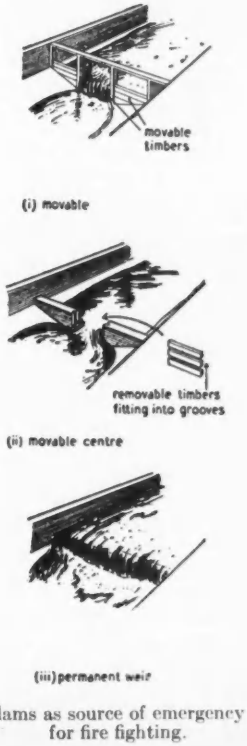
(2) It may often be possible to construct a semi-permanent approach to the water, and such a causeway, if to tidal water, should be built so that it extends below normal low tide mark. A good foundation is made with builder's debris, topped with railway sleepers or brickwork. Precise details of construction will depend entirely upon the state of the ground and on the requirements of navigation.

(3) If in marshy or difficult places it is not possible to make a runway that will take a pump to the water, it may be practicable to take the water to the pump. This can sometimes be accomplished in small streams by means of a channel or by a length of pipe of 10 in. or more diameter connecting two sumps, one located far enough out in the river or lake to prevent mud or debris from the bed collecting in it and the other sited at a place convenient for pumps to stand.

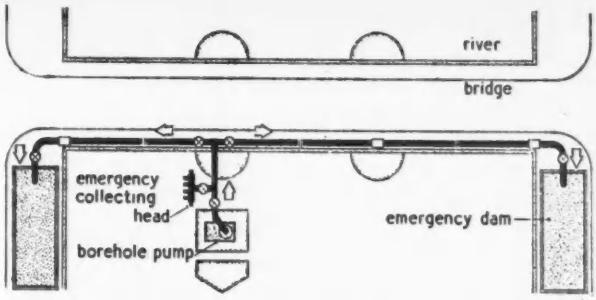
Where the rate of flow of a river is small, the provision of a sump or suitable standing place will not solve the problem. In such a case, it may be possible to arrange to dam back the flow either temporarily or permanently.

In every case the preparation of an approach road must be supplemented by the provision of a standing place that is firm enough to bear the weight of the pumps that will be used and is easy to find and safe to use in darkness without the risk of men slipping into the water or mud.

Where the route is suitable, and provided advance preparations have been



River dams as source of emergency water for fire fighting.



Crown copyright reserved. Used by permission.

Borehole pumps are located on bridges over tidal water and at docks. By arranging the pump so that it is permanently submerged even at the lowest tide the need to rely on the atmospheric pressure to raise water through suction hose into a pump is done away with, and water can be obtained irrespective of the state of the tide. Plan of borehold pump layout above shows pipelines, valves and emergency dams (tanks).

made, it is possible to use some surface water sewers as emergency water mains. Such sewers should be distinguished from those carrying foul water and are constructed so that storm water can be carried away from the streets by means of the gullies and discharged direct into a stream, without the necessity for treatment in a sewage works.

Such sewers are provided at intervals with manholes for ventilation and inspection, and where they are located within reasonable distance of the surface, suction hose can be introduced and, assuming sufficient depth of water in the sewer, a pump can be got to work. Water can be introduced at a manhole close to the supply and the sewer then acts as a gravity pipeline. These sewers are therefore always available to carry water.

The first step in the consideration of such a scheme should be to consult the engineer to the local authority, who will possess maps showing the layout of the sewers and manholes and will be in a position to advise whether such a project is feasible in the district and whether the gradients of the sewers are such that water can be conveyed to the high risk areas.

In one locality, for instance, water can be pumped from a model yacht pond of 2,000,000 gals. [2,500,000 U. S. gals.] capacity through 50 ft. of hose into the nearest manhole, whence it runs a slight gradient for two-thirds of a mile in 17 min. to stopboards which dam the flow so that it can be pumped from the sewer.

It may be possible, in large sewers, to place permanent weirs so that a supply of water is always dammed up at important points. In this case, however, some provision would have to be made to relieve the pressure on the sewer in the event of heavy rainfall. In other cases ancient streams which have been culverted have been equipped with means of control at important points.

Lastly, by means of temporary stopboards prepared in advance, but not placed in position until actually required, it is possible to catch a considerable proportion of the water draining from a fire into the street gullies and so into the storm water sewers, and to pump it back to the fire. The stopboards should be placed in position at points where they will collect the greatest amount of water.

Parts 1, 2 and 3 of the Manual of Firemanship of the British National Fire Service are now available. They may be obtained for 75 cents, for each part, from British Information Services, 30 Rockefeller Plaza, New York, N. Y. They are a useful addition to the library of any fireman or fire company.

●

Inadequate Public Protection Contributes to Big Loss

THE importance of maintaining adequate public fire protection is illustrated in a fire that destroyed a plant manufacturing cutting machine knives at Wapakoneta, Ohio. The fire occurred during the latter part of January with a loss of $227,000. According to a report by the Ohio Inspection Bureau (Member of N.F.P.A.), the fire was due to an explosion of improperly operated oil tempering furnaces. According to the management the fire occurred about 5:15 A.M. and employees claim to have telephoned the alarm immediately. However, the call was checked at the telephone office as having been received at 5:40 A.M.

About twenty minutes were said to have elapsed after the alarm was sent in before the fire department arrived. However, firemen claimed the department was on the scene about three minutes after the receipt of the alarm.

The fire department responded with a 750 gallon pumper and only two men. One of these men is 67 years old and is retired but serves as an extra man. Two off-shift firemen also responded but the chief was out of town.

The local department connected four streams directly to two hydrants without using the pumper. These streams were very poor. The St. Marys Fire Department responded and supplied a good stream by taking suction from the river about 550 feet distant.

Tehachapi High School Fire

Reported by Fire Chief Jack VaHanick

Tehachapi, California

MR. ROACH, employee at the Edison sub-station drove to the fire station at 9:20 P.M. Friday, February 4th, and reported smoke pouring out front of the high school. After sounding fire alarm, I drove the County pumper to the scene, the City pumper and County pick-up pumper following me out. School is located ½ block north and 5½ blocks east from fire station.

I found smoke pouring out of four vents on north side, one vent on west side, and one vent at east end of the original building.

Miss Jean Rogers, teacher, supplied a key to the main entrance on the north side. The hall running east and west through the entire building was full of smoke, heat — all indications of a large fire, yet none was seen. The afore-mentioned vents were between the ceiling and the roof. No fire was visible through windows of rooms 1, 2, 3, 4. Floor of hall was very hot. Only fire visible was in metal lockers at east side of main door about fifteen feet inside. These contained books, papers, etc. This fire caused by superheated air in hall. We ventilated, using door at southeast corner of building. The thought was that the fire was in the gym. A ladder was used to bridge the hall to the gym door.

Now the fire was seen coming through the floor of the hall approximately 25 feet west of the main entry. Glass from the inner windows was heard falling on the floor. A booster line and 1½-inch line were left at this point. The floor of the hall fell in at the main door back to the point where the fire was first discovered coming through the floor. We tried entry through a window of room 3 where fire was then seen at floor and lower wall. A 1½-inch line was placed at this point.

A school fire, particularly a high school fire, can be one of the largest fires that the average small fire department is likely to encounter. When schools are placed in residential districts thought is seldom given to the need for increased water supplies for fire protection.

Water supplies that provide a minimum needed to combat small residential fires will be entirely inadequate for fighting a school fire. Even the most modern schools contain numerous fire hazards that make major fires likely and not infrequent occurrances.

Readers will agree that Chief VaHanick and his men are to be congratulated for a good stop under the circumstances described. The total amount of water available was less than the amount usually employed for one good stream from a line of 2½-inch hose.

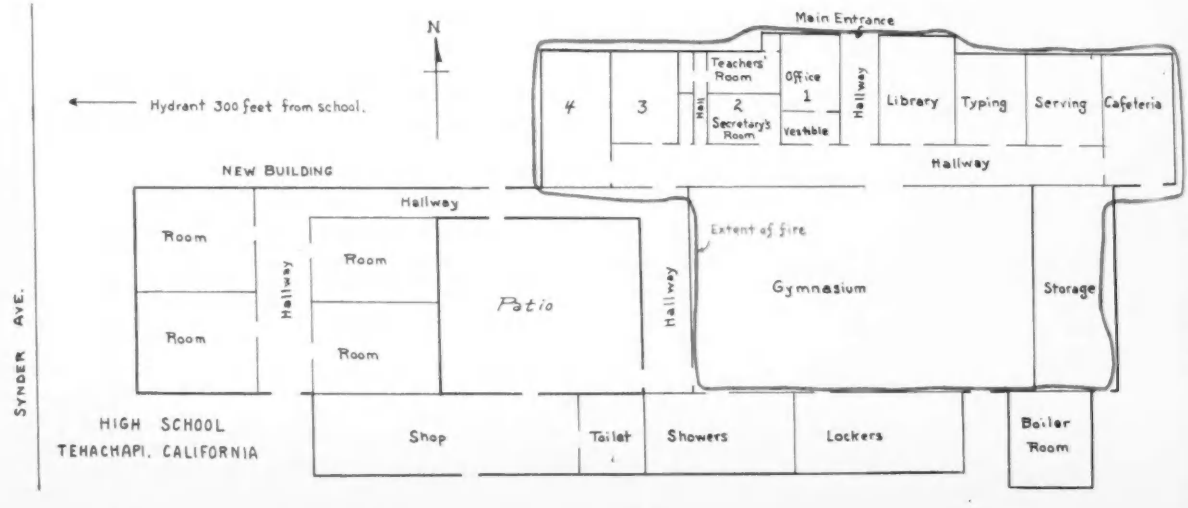
The 2½-inch line was moved from the north to the south side and taken through the shop and patio into the hall leading from the original building. Smoke and heat was intense here so line was shifted to a point at the S.W. corner of the gym but was unable to reach the fire.

At this time the fire broke through the roof at room 3 and then of room 2. The two 1½-inch lines were shifted to the roof of the hall connecting the original building to the new addition and the 2½-inch line was moved to the S.E. corner of the building. This was done to keep the fire from connecting to the new addition consisting of four classrooms, shop, boys' showers, locker room, and boiler room.

We started out with ⅝-inch tips on our 1½-inch lines and a 1-inch tip on our 2-½ inch line; changed to ½-inch and ¾-inch respectively. The two County pumpers were used at various points of the fire and hauled water. The only hydrant available was 300 feet away on a 4-inch dead-end main. This hydrant has a discharge of 238 g.p.m. according to tests made by the National Board of Fire Underwriters in 1940. The east side of town is uphill from our water tank. Our mains are too old and too small and cannot be pumped into direct. Relay pumping was considered from a hydrant on a 6-inch main 1,640 feet to the west, but manpower and lack of hose was a factor. The City pumper carries 950 feet of 2½-inch hose, two 100-foot lengths of 1½-inch hose in the hose bed. We carry four lengths of 2½-inch hose on the running board for emergencies. The County pumpers carry 1½-inch hose only. The sad part of it all was the water supply. When materials were available and reasonably cheap the Council was reluctant to spend the money. Now the correction will be taken care of if materials can be had.

No decision has been reached as to the actual fire cause although the path of the fire has been established as under room 3 at S.E. corner of room, to hall, up hall into gym. No fire stops in walls or floors. Floors were oak over tarpaper, over 1 x 6 pine, on 2 x 8 joists. It is estimated that the fire was burning about five hours before discovery. The loss was placed at $74,010 out of a value of $121,000. All fixtures and machinery in the shop and classrooms of the new addition were removed by SIDE WALK FIRE CHIEFS.

It appears that the fire lesson was put over to the school authorities and the City Council. I have tried since 1939 to correct this particular area as far as the water system is concerned. The Board of Fire Underwriters made a survey on May 14, 1940, with some very important suggestions that were never carried out. I am the only paid man in the department. The volunteers are capable men. In studying this loss with my men the opinion was that we were very lucky that we kept the fire out of the west end of the school.



IF WE WERE in the MARKET FOR FIRE APPARATUS...

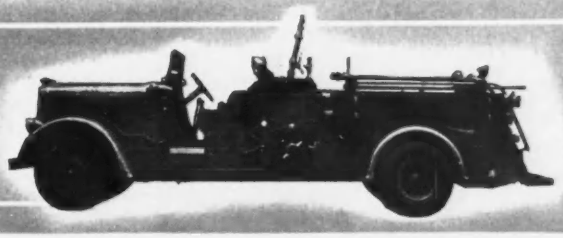
HERE'S what we would want to know about the manufacturer.	AND here are the answers as they apply to Ward LaFrance
● *Just who are these people, anyway?*	The Ward LaFrance business is over twenty-five years old. Now a division of Great American Industries, Inc., Mr. A. Ward LaFrance continues to head and supervise engineering and manufacturing at Elmira, as Vice President of "G.A.I."
● *What's their reputation?*	We'd rather let others tell you about that, and we will gladly give you the names of hundreds of fire officials in towns and cities of all sizes who know Ward LaFrance apparatus from years of using it.
● *Are they "up" on the latest developments in fire engineering?*	Among recent purchasers of Ward LaFrance-built fire apparatus are the U. S. Army, the U. S. Navy, New York City, Philadelphia, Pittsburgh and Minneapolis. Nothing but the latest and best will satisfy such customers.
● *Is motorized fire apparatus their real business, or just a side line?*	Ward LaFrance people are "fire" people. Their engineers are specialists. Fire apparatus is their *main* peacetime line, not a side line.

Now is the time to think about replacing old motorized equipment with ultramodern apparatus. Consult our engineers about the requirements of your community.

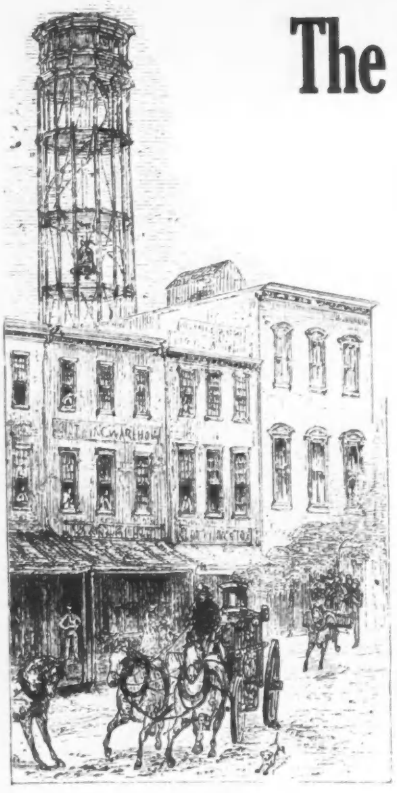
WARD LaFRANCE

TRUCK DIVISION, GREAT AMERICAN INDUSTRIES, INC.

ELMIRA NEW YORK



The Life of a New York Fireman



The Old Bell Tower

IT is past midnight, and I lie awake on a small crib, similar to ten other cribs which are ranged equidistant along a narrow dormitory. At the left side of each bed is placed a pair of high boots, into which a pair of trousers has been carefully tucked. All the arrangements of the room show care; everything is in apple-pie order, and it is quite evident that the boots and trousers have not been placed with such exactness by any hurried chance.

I have relapsed into a doze, when a loud-sounding bell breaks the silence with several imperative strokes following each other in quick and startling succession — the cause an electric current, the effect like the crack of doom in a limited area. The sleepers spring out of their beds simultaneously, without losing the tenth of a second in hesitation or surprise; ten pairs of legs are simultaneously thrust into the trousers by the bedside, and two hitches pull on both trousers and boots.

Below stairs the horses are hitched to the engine, the driver is on the box, the furnace is lighted, the men have taken their precarious positions on the tender, the doors leading to the street are wide open, and one minute has not yet expired since the first stroke of the bell! The horses plunge forward, and the machine rolls off the smooth floor of the station on to the cobble-stones of the street, which seem to fly out of their beds in the rebound of the wheels. The excitement bewilders; the stores and houses along the route are indistinct; for a moment our feet are shaken from under us as we sharply turn a corner.

The tremulous finger of the steam-gauge indicates a high and higher pressure; the furnace blazes with increasing vehemence, and the smoke-stack emits dense sparks, which are blown back upon us, and inclose us in their suffocating blackness.

Quick Response

The engine stops abruptly in front of a building out of which some smoke is drifting; the hose is uncoiled from the tender, a hydrant is tapped, and in less than five minutes after the stroke of the alarm at the station a stream of water is thrown upon the fire by the engine, which gasps for breath, apparently, at the haste. Within those five minutes twelve or thirteen men have been aroused from a sound sleep and have dressed themselves, three horses have been taken out of a stable and attached to vehicles, and the vehicles and men have travelled five blocks.

As soon as they return to the station, the horses are groomed, the harness is washed with Castile-soap, the hose is readjusted on the tender, and an hour afterward, or less, the company is fully prepared to answer another alarm.

Automatic Devices

The horses are almost as well trained as the men. The moment the alarm sounds, they spring out of their stalls and put themselves into the shafts without a word of direction. Up to that moment they have been haltered; but the stroke of the bell releases them by an automatic arrangement of weights, pulleys, and shafts.

So, too, the pipes connecting the boiler of the engine with a boiler in the cellar of the building, and thus maintaining several pounds of steam in the former, though its furnace is not lighted, are automatic. As the engine leaves the station for a fire, the pipes close themselves, and do not require a moment's attention from the engineer, who simply has to leap, with his assistant, on to the platform, and to hold on for dear life. The driver secures himself on his box by straps, without which he could not keep his seat, and in the daytime one man runs ahead to clear a passage for the engine in the crowded streets.

The men and officers are on duty night and day, except one hour in every twenty-four allowed for meals. Each man is allowed a twenty-four-hour holiday once a fortnight, however, and the horses are exercised one hour a day.

All Companies Called

No matter in which quarter of the city a fire is, the alarm is sent to every station-house, and at the first stroke of the bell, every company is required to prepare for action. The completion of the signal may show that only four out of the forty-two companies in the city are required, but the other thirty-eight are also ready to dash out of the station while the gong is still humming and vibrating the last note of the signal.

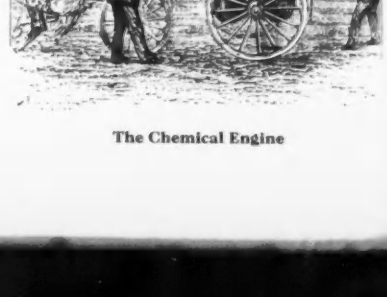
The streets are patrolled from 6 o'clock P.M. to 6 A.M.; and every morning a report is sent by the foreman of each company to the chief of the department, giving the number of men absent, sick, or off duty for any other cause.

Besides the street patrol, watchmen are stationed in bell towers during the day and night, keeping a constant look-out over the roofs for any sign of fire. It was formerly the custom to ring the bells when a fire was discovered, as a warning to the neighborhood, but they are now used only in striking the curfew at nine o'clock.

Hook-and-Ladder Companies

Besides the engine companies, there are separate organizations known as hook-and-ladder companies, and in densely populated districts two of these attend a first alarm in conjunction with four engine companies. The ladders are carried on long trucks, and are used in saving life and in conveying the hose up to the higher stories of burning buildings. The hooks are used in tearing down partitions into which the flames may have insinuated themselves.

A hook-and-ladder company galloping to a fire and turning the sharp corner of a city street is a sight even more thrilling than that of the engine rolling forward in the cloud of its own smoke. The truck is long and narrow, and has the appearance of being easy to upset. The driver in front and the brakeman astern have a perilous



The Chemical Engine

This article is condensed from an issue of "Harper's New Monthly" magazine published in 1877. It is reprinted here from "High Pressure", published by Walter Kidde & Co. to whom grateful acknowledgment is made.

time of it; so do the vehicles which happen to be in the way; but dexterous management, as clever as the handling of a yacht in a race, usually averts the accident, which, as usually, appears to be imminent.

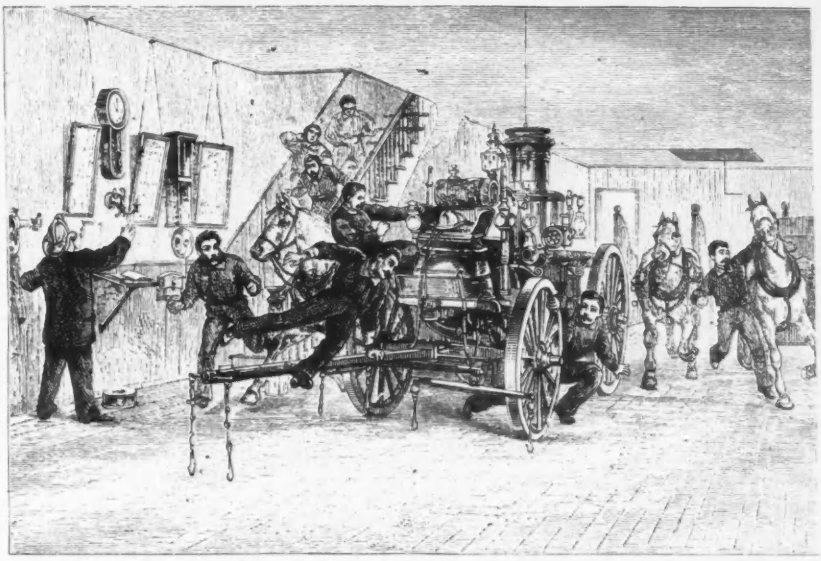
The so-called chemical engines of the Babcock pattern were introduced into the department some time ago, and nine of them are now in use — four four-wheeled double-tank machines and one four-wheeled single-tank machine in charge of hook-and-ladder or engine companies which are also supplied with the regular apparatus. The use of self-propelling fire-engines, of which there are five in the department, has resulted in an average saving of eight horses and the cost of their maintenance; and the commissioners believe that these machines promote both economy and efficiency, and in the last annual report recommend their general adoption.

Fire Boat

The water-front and the shipping are protected by a steamer named the *William E. Havemeyer*, stationed at the foot of Pike Street, East River, and manned by twelve men. Her pumps are the same as those attached to the street engines, except that they are more powerful, throwing twelve streams of water at once.

Speaking of her, we are reminded of the water supply, the sufficiency or insufficiency of which radically affects the department. On this subject the last report (January to December, 1876) contains the following paragraph: "With very few exceptions the hydrants in all localities are connected with the smallest pipes in the streets upon which they are located, and it thus frequently happens that at large fires, where a number of powerful steamers draw upon the same pipe, or upon pipes of the same diameter contiguous to or dependent for their supply upon the other, the quantity of water proves inadequate for all, and sometimes, at a critical juncture, deprives the department of the services of apparatus indispensable to an efficient performance of the duties devolving upon it." When either of the rivers bordering the city are within reach of the hose, they are drawn upon, their inexhaustible quantity making them preferable to the hydrants, and their saline quality in no wise injuring the machinery.

Hook-and-Ladder Company



Responding to the Alarm. This picture is worthy of considerable study by those interested in fire service history. The scene antedates the invention of the sliding pole, first installed by a New York City fire captain anxious to beat the speed of rival fire companies. It also antedates the invention of the suspended snap harness, later hung from the ceiling in front of each piece of apparatus when in quarters. Also at a later date most city steam fire engines were drawn by three horses. Note the open flame gas lamp at the patrol desk where the officer is shown verifying the alarm. A metal cap suspended by a wire covers the stack of the steam fire engine. Later on steel rails were laid on the apparatus floor on which the apparatus was backed in by hand. Fire station floors were invariably of wood in the early horse-drawn days.

Causes of Fires

By far the commonest cause during 1876 was carelessness with matches, pipes, candles, cigars, and lamps, to which 371 fires are ascribed; the second cause in frequency was foul chimneys, of which there were 144 cases; fire-works and transparencies caused 105 fires; spontaneous combustion of oil rubbish, 25 fires; explosions of kerosene lamps, 93 fires; and improper construction or arrangement of flues, 20 fires.

The perfection of the department depends as much upon the effectiveness of the telegraph service, by which the men and engines are called to a fire, as upon the quickness and energy with which they respond.

Forty-one box circuits connect 545 alarm boxes, which are secured to the brown and gray poles of the department.

When the outer door or lid of the box is unlocked and opened, a small hook for the finger is found projecting from an iron plate which hides and protects the interior machinery from all except members of the department, who are provided with extra keys. A long narrow slit in the iron plate allows the hook to be pulled down several inches, by which means a clock spring is wound up and the circuit opened, and when the hook is released, the spring sets a small wheel in motion, notched with as many notches as there are figures in the number of the box.

The box also contains a Morse key, answering all the purposes of a Morse instrument, and enabling anyone having access to it, connected with the department, to ask and answer questions, or to transmit second and third alarms. Ten strokes and the number of the box repeated on the Morse key constitute a second alarm, and twelve strokes and the number of the box, a third alarm. Should the fire be discovered by a member of the department, and not be deemed of sufficient importance to justify a general alarm, he would not pull the hook at all, but would summon, by fourteen strokes, an engine only; by sixteen strokes, a hook-and-ladder company; by eighteen strokes, a chemical engine; or by twenty strokes, in case of accident, an ambulance. The Morse key further enables the chief officer of a company who is away from his station on business to inquire at headquarters through any of 545 alarm boxes whether any fire has occurred on his circuit during his absence, an affirmative compelling him to return at once to his station, and a negative allowing him to go on with his outside business.

Indirect Alarm

When the circuit is opened, the alarm is not transmitted directly to the engine-houses, as it is transmitted in most other cities. It first reaches the operating-room at headquarters, and is thence repeated over one of the gong circuits to the engine-houses in the district indicated by the number of strokes, the gong circuits being so called on account of their connection with the bells which, in the night-time, break upon the slumbers of the firemen with the startling effects that we have seen.

(*International*) Typical aircraft and hangar fires fought by Nassau County Volunteers

Fighting Aviation Fires in Nassau County, New York

By County Fire Marshal George W. Clough

SINCE the early days of heavier-than-air planes, Long Island, and Nassau County in particular, has been regarded as an aviation center, with commercial flying from Old Curtiss Field at Garden City, Roosevelt Field at Westbury, and the military operations from Mitchel Field.

Following the first World War a new Curtiss Field was established at Valley Stream with Roosevelt Field expanded to include the old Curtiss location, the Aviation Country Club established near Hicksville, the Army post at Mitchel expanded, a small commercial field at Massapequa, test fields laid out by aircraft manufacturers at Farmingdale and Bethpage and a sea-plane base at Port Washington.

With the very considerable amount of flying, plane-building, maintenance and repair and the hangars and other buildings incident thereto, our fire departments have had quite a little experience with fires in these risks.

The earlier of these involved primarily the contributive hazards of high test gasoline, combustible aircraft, fabric, dope and magnesium flares, to which the current war has added high explosive and incendiary bombs, depth charges, a multiplicity of pyrotechnical devices and electrically controlled machine guns and cannon.

Our 68 volunteer public fire departments were called upon to handle all such fires and still are except for those dealt with by the greatly increased and expanded Federal Civilian Fire Department at the Mitchel Field Army base, and the formation of Fire Brigades at the aircraft plants and that portion of Roosevelt Field operated as a Naval facility.

THESE experiences have covered just about every type of incident we can anticipate including fires in shops, storages of inflammables and combustibles and aircraft in hangars, planes on ramps and on the line, upsets of planes taking off and landing, crash landings, collisions in the air with spin-ins and planes abandoned in the air. A number of these planes have struck, or come down on buildings or exposed them.

Fires resulted in the earlier cases principally because ignition was not shut off and while it has become a first rule and perhaps second nature for pilots to cut the switch in case of abandoning ship or expecting a crash, fires still result due to sparks from metal parts.

This article is based upon a report by Fire Marshal Clough given before the N.F.P.A.-Army conference on airplane fire fighting held at Memphis, Tenn., on January 15th. Marshal Clough was asked by the N.F.P.A. to make this report because of the extensive experience the volunteer fire departments of Nassau County, N. Y., have had in handling such fires.

Our experiences have shown that the fires in exposed property are little if any different from others caused by excessive heat radiation or gasoline spills and that plenty of water is still the best extinguishing agent.

It has also seemed that, except where rescue of persons is required, good streams of water, if available, will deal most effectively with the main body of plane fires, supplemented by any approved Class B extinguishing agent, to clean up engine craters, pockets or tanks which may contain quantities or pools of gasoline.

While there may, in some instances, be stubborn fires in the magnesium of incendiary bombs or metal of the planes themselves or in pyrotechnics, such fires are usually localized where they may be given the special treatment indicated.

NATURALLY, crashes will frequently occur deep in fields or woods remote from mains or natural water sources to supply pumpers. In these cases we can only bring into play whatever extinguishing agents are available according to the size and severity of the fire when the scene is reached. For these purposes, we carry, on fire apparatus, which would respond, portable high pressure carbon dioxide and foam extinguishers, usually booster tanks of from 100 to 500 gallons capacity, Phomaire playpipes, foam generators and in some instances fixed tanks which produce up to 400 gallons of foam.

We believe that where lives have been lost in our territory, within the past twenty years, the percentage where the fire was the proximate cause of death, is relatively small but also believe that there is imminent danger to life from this source.

We further believe that the best chance of saving life in these instances is afforded by volumes of carbon dioxide as provided by the low-pressure system carried on trucks built by the Cardox Corporation of Chicago.

With the use of this system, a fire which could not otherwise be approached nearer than 75 or 100 feet because of the intensity of radiated heat, can be directly and immediately entered even to the point of touching the burning plane, with relative safety to operating personnel and any occupants removed all within the time of discharge of the carbon dioxide even if the fire is not entirely extinguished.

It is fully realized that such low pressure trucks, usually carrying three tons of liquid carbon dioxide, are expensive. It is unlikely that they can be provided and so spaced as to permit of a response to the scene of a crash in open country in time to effect life saving, but we feel that on an airport, which is where most of our fires in planes have occurred, they are the best answer to the problem yet devised.

About two years ago, when it became evident that substantially all of the planes flying over our country were loaded for combat, we consulted the Ordnance and Public Relations officers of the Army as to the desirability of issuing instructions to the Fire Service.

While they insisted that the safe distance from a loaded plane on fire was not less than a thousand yards, they appreciated that firemen could never be kept this far away regardless of the personal risk, especially where a plane might fall on the main street of one of our towns, and collaborated with us in preparing a bulletin to our departments outlining the following rules as minimum requirements for even reasonable safety of fire fighters:

1. Keep others than firemen or police at least 1,000 feet away.
2. Permit no one in front or in rear of the plane as these are the directions of fire of machine guns and cannon.
3. Evacuate any building in the line of fire.
4. Permit no one, not even a fireman, within 75 feet of the sides of the plane.
5. Use only heavy streams of water or foam if the fire is of any important size.
6. Expose the smallest possible number of firemen. Keep the rest away.
7. If fire has burned more than seven minutes, *let the plane alone* and devote attention to exposures.
8. Even if fire is apparently extinguished, keep away until Army takes command.
9. On arrival of Army personnel, turn command over to the officer in charge and thereafter assist only at his direction.

"AKRON BRASS"

MULTIVERSAL NOZZLE

An automatic fire fighter that once put into action needs no further attention — releasing needed manpower for duties at other points.

The Akron Multiversal Nozzle is a one piece unit ready for action as soon as hose lines are connected. In position and under pressure it plays a stream, without attention, as long as necessary. Remarkably flexible. Nozzle turret operating on ball bearings, swings in a complete circle and allows stream to be directed up or down — from an elevation of 90° to 30° above horizontal.

AKRON BRASS MFG.
COMPANY, INC.
WOOSTER, OHIO

Deck-pipe type Multiversal Nozzle now in operation on Coast Guard patrol boats.

AKRON BRASS

FIRE FIGHTING EQUIPMENT

HITLER'S FIRE SERVICE

Digested from an article by D. L. Laidlaw-Dickson appearing in the December 1943 issue of "Fire Protection," official journal of the National Fire Service Officers' Association (Great Britian).

GERMANY may well claim to be the inventor of modern air raid precautions, for as early as 1935 the *Luftschutzgesetz* (Air Defense Laws) were passed, modified in 1937, and brought up to date again on the outbreak of war. These laws created the *Reichsluftschutzbund* (RLB) which was a volunteer organization financed by subscriptions and by a special commemorative series of postage stamps. All passive air defense measures were grouped with active air defense under one central control. There is no separate National Fire Service, which is merely one of the numerous civil defense services including such departments as Red Cross, Relief, Health, Street Cleaning, Rescue and Demolition. These departments were, until the beginning of 1943, under the control of the Reich Air Ministry, with the assistance of the police as executive authorities. The RLB was also under Air Ministry guidance, and acted as the main center of A.R.P. (air raid precautions–*Ed.*) training. There were numerous sub-divisions, organized in small units with very little intermediate leadership, resulting in confusion in times of crisis.

Large scale British raids in the spring of 1942 brought home the need for re-grouping and stricter control. The police were then given unlimited and not merely executive control, as the civil defense services were re-classified as a branch of the *Ordnungspolizei*, under the title *Luftschutzpolizei*. The Security and Emergency Service has been renamed the *Luftschutzpolizei*, but is still often refered to by its older name or by the abbreviation SHD. It comprises elite of the fire services as well as advanced rescue, demolition and other civil defense services.

The professional brigades though nominally nationalized early in the Hitler regime are by no means uniform in methods or equipment, and there is still considerable variation in the types of hydrant, hose couplings and appliances in use, as well as in the drills. This has to some extent been improved by the standard training given by the RLB, though this applies mainly to volunteer and auxiliary fire services. It should be noted that the SHD is called upon only in the case of major fires. It does not automatically go on to factory calls, as the works brigades are expected to be able to cope with larger occurrences than would be the case in this country.

SHORTAGE of man-power is a critical problem. Public announcements in the last six months reveal that seventy per cent of the peacetime strength of professional fire brigades have been called up for the armed forces. New laws have been passed making it compulsory for all able-bodied nationals to undergo a period of training with their local fire brigades. Only exceptionally poor medical reports serve to exempt these personnel.

Rural areas are still largely covered by volunteer brigades, whose efficiency leaves much to be desired. Their administration was completely revised in June 1942, when rural areas were parcelled into commands comprising eight to ten local authorities, and arrangements made for mutual assistance. The auxiliary fire services are comprised almost entirely of part-time personnel, with a few key men, appointed by the police as much for their political soundness as their fire-fighting ability.

The Selbstschutz or Personal Defense section deals with shop property, empty premises and the smaller factories on the lines of our own fire guards. They must be prepared to carry the job through to the bitter end. The fire guards for private houses do not extend beyond their own block of flats. It must be remembered that the German worker is a flat dweller, and lives in a block, usually containing forty to fifty flats, as close to his place of work as possible. All must, by law, belong to the *Selbstchutz*, and are under the control of a house warden, usually the janitor of the block of flats. These men have had advanced training and are provided with asbestos fire-fighting equipment. They also receive a free respirator, unlike the rest of the population who must buy their own. In many cases these flat porters are not at all suitable for leadership, and brief authority completely unbalances them, besides giving them opportunities for petty spite against unpopular tenants.

Until the reorganization in 1942 this was the only unit of command, and since the house warden's authority extends only to his doorstep, there was unbelievable confusion when fires got out of hand and embraced several blocks of flats. Regional commanders have now been appointed and can order parties from house to house.

STRANGELY enough the *Reichsluftschutzbund*, though the cornerstone on which the whole ARP edifice has been built, is a private organization without official authority, although affiliated to the National Socialist Party. At the outbreak of the war they claimed to have trained no less than fifteen million persons in the rudiments of civil defense. This affiliated body is the nearest the Nazi party comes, in its official capacity, to active fire fighting. Orders state that party members can best be used in restoring morale after a raid.

The *Sturmbanne* are a semi-military mobile reserve, composed of highly trained and well equipped men on a part-time basis, who are used to supplement forces in any heavily bombed district. Their duties are not confined to fire fighting, but embrace relief work, or even normal police duties. They have been shown on parades as armed. In some parts of the country trainee *Stormtroop* detachments are employed on similar duties. They receive SHD training and are officered by regular SA men, and have military discipline. Units are formed from volunteers, and appear to be one of the groups to which all able-bodied men can be conscripted for part-time work, so that the "voluntary" nature of their enlistment is probably ". . . or else!"

Acute shortage of manpower has now led to the conscription of women for fire-fighting purposes. It is stated that they will not be expected to do ladder work or jumping, but will act as "ground floor firemen." Generally it is left to local needs, as to whether such conscription be enforced.

AT the outbreak of war German factories were turning out excellent light pumps and fire engines, ironically enough, mainly for export to adjoining countries. Today there appears to be a considerable shortage of such appliances in the Fatherland. Press references mention fire chiefs as promising that "soon all brigades will be in possession of at least one motor pump. There was interesting news in February 1943 of a pump supplied for the use of a regional *Selbstechutz* commander which apparently has a crew of nine men. The description states that if necessary four men can carry it. The nature of an appliance that can be carried by four men and yet requires nine men to operate it suggests a large type of manual pump.

For use of auxiliary services the trailer pump has not found such popularity as in this country. German brigades prefer a light self-propelled pump with a trailer for hose. Such a unit is turned out for about $2,000. The equipment of the municipal professional brigades is at least the equal of the better peacetime brigades in this country (Great Britain) but the rural and volunteer brigades are very poorly equipped, "steamers" and manual pumps being common in many districts.

As Nazi propagandist have declared so loudly that no major force of British bombers would ever get through to attack Germany, it is not surprising that such essentials as supplementary water supplies have been long neglected. In the Munchener Neueste Nachrichten of July 23, 1942, it was announced that in consequence of mains failures in the past "many towns in Western Germany . . . have started to create additional water reserves by constructing ponds and cisterns." Inadequate supplies have had disastrous results in many of the bigger raids.

Sand is extensively used in the big cities, dumps being deposited in the main streets for householders to draw upon. The use of sand for quite big fires is also recommended. Due to the sandy nature of the soil in many parts, provision of sand dumps is very easy, and involves no transport problems. Shortage of suitable materials for hose is another point in favor of the increased use of sand. House wardens are required to install an impressive list of equipment, including ladders, sand, and water buckets, "firebeaters" and stirrup pumps on each floor, but there is no mention of hose, though in the usual large blocks of flats, this would seem to be a necessary precaution.

Prepared for Fire!

Official U. S. Navy Photographs

"Ready if the Heat's On"

Crash landing of a bomber, damaged by enemy fire, on the carrier deck may result in a burst of flame endangering the ship as well as plane.

These "hot papas," as the fire fighters are known, stand garbed in asbestos suits ready to spring into action with their fire fighting equipment. Complete and efficient preparedness is saving lives of valiant aviators as well as ships and equipment.

National Fire Foam and Equipment have proved their effectiveness in fighting fires at sea, and have been commended for performance in extinguishing serious fires on board our fighting ships.

Adopted and extensively used by the U. S. Navy, National Fire Foams and Equipment are also used by most oil refineries and many large industrial plants.

IN FIRE DEPARTMENT SERVICE

National Foam System has equipment especially designed for the use of Fire Departments to meet all types of fire fighting requirements. Complete engineering service available.

The experience of our engineering department is at your service.

NATIONAL FOAM SYSTEM, INC.

Specializing in Foam Fire Protection

Packard Building, Philadelphia 2, Pa.

THE EMERSON RESUSCITATOR

PROVIDES

BETTER LIFE SAVING

FOR

VOLUNTEER DEPARTMENTS

Now more than ever, your department needs a resuscitator that is dependable and effective in all emergencies. Our record in fire departments, industrial plants and the armed forces explains why today we are the largest builders of automatic breathing equipment in the world.

Representatives in Principal Cities

J. H. EMERSON CO.
24 Cottage Park Ave.,
Cambridge, Mass.
Representatives in Principal Cities

MEMBERSHIP REPORT

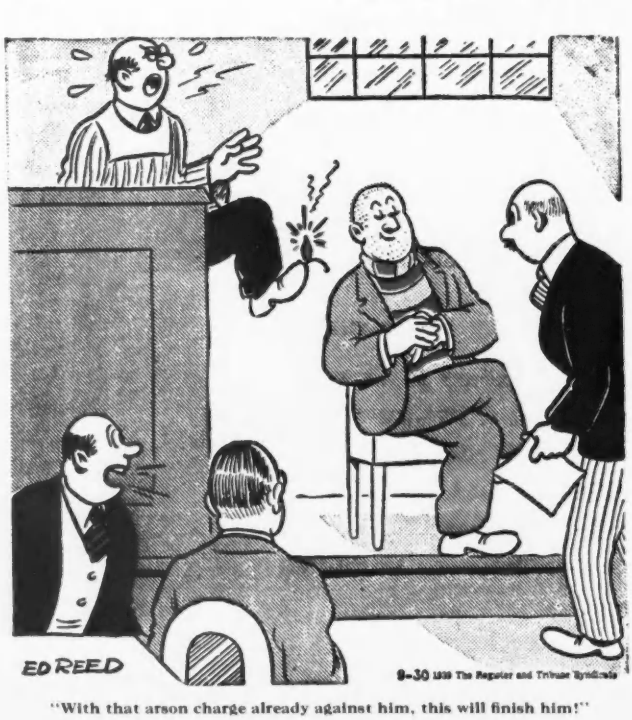
N. F. P. A. Volunteer Firemen's Section

LAST month 24 fire departments joined the Volunteer Firemen's Section of the N.F.P.A. bringing the total membership of the section to 1,067 departments, a new high in enrollment. This is a gain of 293 departments or 38 per cent over the number enrolled one year ago. This is more than an eighth of the entire associate membership of the National Fire Protection Association. Other leading groups in the N.F.P.A. are industrial concerns; insurance organizations and representatives; and federal, state, and municipal officials including fire chiefs and fire marshals. The newly enrolled departments are shown below.

Scottsboro Fire Department, Scottsboro, Ala.
Vallejo Fire Dept., Vallejo, Calif.
Norwood Park Township Volunteer Fire Department, Chicago, Ill.
Citizens Fire Volunteers, Inc., Melrose Park, Ill.
Turner Brass Works, Sycamore, Ill.
Allegany Ballistics Laboratory, Cumberland, Md.
Adrian Fire Department, Adrian, Mich.
Crookston Fire Department, Crookston, Minn.
Hopkins Fire Department, Hopkins, Minn.
Sullivan Volunteer Fire Department, Sullivan, Mo.
Engine Company 1, Saddle River Township Fire Department, Saddle River Township, N. J.
Waterville Fire Department, Waterville, N. Y.
Roanoke Rapids Fire Department, Roanoke Rapids, N. C.
Frazeysburg Volunteer Fire Department, Frazeysburg, Ohio
Rossford & Ross Township Fire Department, Rossford, Ohio
Marshfield Volunteer Fire Department, Marshfield, Ore.
Ogontz Fire Co., Elkins Park, Pa.
Emporium Fire Department, Emporium, Pa.
New Kensington Volunteer Fire Department, New Kensington, Pa.
Troup Fire Department, Troup, Texas
Keysville Fire Department, Keysville, Va.
North Park Fire Department, Seattle, Wash.
Army Air Base, Carper, Wyo.
Berwick Fire Department, Berwick, N. S. Canada

MEMBERSHIP PLAN

- Through the Volunteer Firemen's Section, fire companies may become N.F.P.A. members. Each member fire company is entitled to have VOLUNTEER FIREMEN magazine sent to the homes of ten firemen.
- As a member, the fire company receives at headquarters a set of all other regular N.F.P.A. publications. This includes the QUARTERLY MAGAZINE and monthly NEWS LETTER.
- Membership in the National Fire Protection Association costs ten dollars per year. If more than ten firemen want to receive the magazine, an additional one dollar should be sent for each additional fireman enrolled.



"With that arson charge already against him, this will finish him!"

N.F.P.A. Executive Office in New Quarters

THE N.F.P.A. Executive Office in Boston, including the editorial office of VOLUNTEER FIREMEN, recently moved into enlarged and improved quarters on the ninth floor of the Public Service Building. The former offices on the eleventh floor of the same building have been outgrown due to increased wartime activities that have seen the addition of nearly 3,000 new N.F.P.A. members in the past two years.

The new quarters occupy the entire north wing on the ninth floor between Batterymarch and Broad Streets. General Manager Bugbee's office on the Broad Street side overlooks a portion of historic Boston Harbor. The new quarters include improved facilities for the publications department that sends out hundreds of items of fire protection information each year, and increased space for the Association's voluminous files of fire reports and other vital fire protection information.

The N.F.P.A. address remains: 60 Batterymarch St., Boston 10, Mass. Batterymarch Street gained its name as the route that the battery used to take going to nearby Fort Hill formerly overlooking Boston Harbor. The hill was leveled off to form a park many years ago. A small ancient cannon, unearthed when excavation was made, is on display in the Public Service Building.

Fire Centenarian Dead

GEORGE WASHINGTON COLLIER, the last of the old-time volunteer firemen who served before New York City had a paid fire department, passed away recently at the age of one hundred years. We reprint here the obituary by William Jerome Daly, whose "Pyro" column in "The Chief," the civil service employees' newspaper, so ably records the firemanic history of the metropolis.

"The daily press devoted its leading obituary . . . last week to a resume of the colorful life of 100 years and eight months of George Washington Collier, Civil War and Volunteer Fire veteran, who died Feb. 25. But if the old gentlemen's voice could be heard today he would without doubt single out for top approval the account of his career which, appropriately enough, appeared in the September '43 issue of VOLUNTEER FIREMEN. It was his last published interview.

"Mr. Collier was the last of the Volunteer Firemen of the New York Brigade that was acquired by the paid department in 1865. He just loved to talk about his "red shirt" days. A few summers ago he was the center of a group of blueshirts at Johnny Gilmartin's outing and dinner of 20-year veterans. Mr. Collier held the respectful attention of an admiring coterie.

"He was a member of Gardian Engine 29, located at Washington and Perry. Later he became foreman of Jefferson Engine 26 at Henry and Rutgers. He was 22 years old when the paid department was organized, but he never joined. He was president of the Exempt Firemen's Assn. and at the time of his death he was senior trustee of the Firemen's Home at Hudson, N. Y."

CIRCUL-AIR THE AIR CONDITIONING FIRE HOSE DRYERS

Do A Better Job

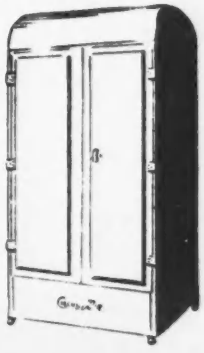
in 1/10 the TIME • ¼ the SPACE • with ½ the Work — *or less*

Save Building and Repair Costs and
Improve New Station Design
A PEACETIME ASSET — A WARTIME NECESSITY

Immediate Delivery — From Stock

USED EXTENSIVELY BY:

Navy Yards, Army, Navy and Marine Air Stations (app. 100) • Chemical Warfare • Arsenals • Ordnance plants • Shipyards • Bell Aircraft • Glenn Martin • Vought-Sikorsky • Consolidated-Vultee • Pratt & Whitney (2) • Eastern-Aircraft • Bendix • Ford (2) • Buick • Packard • Chevrolet • Cons. Steel • B. F. Goodrich (5) • General Electric • Caterpillar Tractor • Detroit Diesel • Dodge • Tennessee Eastman • Inland Mfg. • Fisher Cleveland Aircraft and many, many others.



And over 125 Cities, Villages and Townships

THE CIRCUL-AIR CORPORATION
6339 East Palmer ··· Detroit 11 Mich.

FAST, EFFECTIVE

FIRST AID for BURNS

with modern SPRAY application!

M·S·A FOILLE BURN SPRAY KIT

Combining all the advantages of Foille for burns with quick application and rapid coverage of injury, this modern Kit provides a highly-efficient spray gun which connects direct to the jar of Foille —no time wasted in mixing ingredients or making solutions—always ready for instant use! Extra jars of Foille, unit-packaged first aid dressings and accessories—including sterilized muslin sheet—make this sturdy, metal-cased Kit complete in every detail. For continued treatment and refilling of the jars keep an ample supply of Foille on hand—available in gallon bottles. Write for Bulletin No. FA-73 or send us your order—immediate shipment!

MINE SAFETY APPLIANCES CO.
BRADDOCK, THOMAS & MEADE STREETS
PITTSBURGH, PENNA.

One of Cleveland's 13 new pumpers—built by Buffalo Fire Apparatus Corp.—equipped with FEDERAL Sirens.

THIS ASSURES GREATER SAFETY

Your valuable apparatus will be assured greater safety when you equip with FEDERAL Sirens.

There is a model for every type of service and for every condition — coaster sirens, double coaster sirens—with or without flashing red light—with or without brake—in any combination which best fits your requirements.

FEDERAL Sirens are backed by more than 40 years of signal engineering. They contain many exclusive features. They are constructed to give instant and dependable service—to assure greater safety for your valuable apparatus.

Write for bulletins today! Learn more about the new and outstanding siren developments by FEDERAL.

The FEDERAL Fury Exhaust Whistle is available as a warning signal in those communities which still prohibit the use of sirens under wartime conditions. Two new models of oscillating lights are also available for additional protection by a visual signal.

FEDERAL ELECTRIC CO., INC.

SIREN HEADQUARTERS

8717 So. State Street — Chicago 19, Illinois

Midwestern Combination Suit

Rubber or Canvas

Standard in many Municipal Dept's

All Over America

You can buy either the coat or the pants separately or together. The coat is a highly serviceable garment as a result of rugged and superior quality throughout. Flexible elastic inner sleeve for wrist. Adjustable collar strap, detachable wool lining, Midwestern safety snaps, 2 outside pockets, 6-inch storm flap, and many other good features.

Bunker Pants

- Lining held by snap buttons
- Eight suspender buttons
- Safety snap on belt
- Wool Lining
- Reinforced adjustable belt
- Wide protecting flap
- Reinforced by rivets

See your local Midwestern distributor for prices and literature, or write the factory.

MIDWESTERN MANUFACTURING CO.

MACKINAW, ILLINCIS

Our Readers Say—

"I HAVE read with a great deal of interest the article in the January issue of VOLUNTEER FIREMEN sent you by the Wyckoff, N. J. fire company and thinking that perhaps the alarm set-up that our company has working here in Littlestown, Pa., may be of some benefit to other small communities (our population is 2,600) I am submitting it.

"We have a circle of almost five miles radiating out from Littlestown that we have to protect, all of which is a rich farming district. This in addition to our own town, one of the biggest industrial centers for it's size in this part of the country. We have seven large and two smaller sewing factories, plus two large canning factories, with other smaller ones in the rural areas. Our employment in industry ranges from 1,800 to 2,000 or above, the latter figure being reached when the canning industry is at full peak.

"We have a siren installed in our engine house which can be turned on or off at the local phone exchange. At the engine house we have a siren switch located outside the building, enclosed in a metal case with a glass door. After dark this is lighted with a red bulb and plainly marked "Fire Only." Most calls are received through the local phone exchange.

"Since the war, 35 members of our company have gone into the armed services, leaving us only about 25 active fire-fighting members out of a membership of 200. Quite a few of the older men have done their duty in the days gone by and cannot stand the strain of fire fighting now, but they are always around to help with the administrative duties of the organization.

"To meet these conditions and give our community the proper protection we have the following plan in effect: First, for the day period when all the men are working. Second, to always have two truck drivers on duty each weekend and available through the nights of the week.

"From 7 A.M. to 5 P.M. our local telephone operators handle all alarms. When they receive a fire call one operator turns the siren on while the other puts through three calls. The first call notifies the fire chief, truck foreman and to myself (company president). We are notified by a fire alarm signal we have in the plant where we work. This is sounded by the plant office when the call is received. Before we leave the plant we are told the location of the fire. We speed to the engine house for the equipment. The second call, made to another plant, is sounded the same way on the plant signalling system and at least six firemen leave that plant and head right for the fire. The third call goes to another plant where the assistant chief works. He is notified by one of the office girls and always three or four firemen from that plant head for the fire.

"When the three of us get to the engine house, we shut the siren off and get underway after marking the location of the fire on a blackboard installed just inside the doors for the information of other firemen. There is a telephone above the blackboard.

"This daytime schedule has been in effect for slightly over a year and we have been able to save some valuable farm buildings through our ability to reach the blaze before it made any headway. One incident was a burning straw stack in a barnyard only ten feet from a large barn and about an equal distance from a large hog barn. Here we used our booster tank, which we could fill faster than the booster hose could use the water. When the tank

was full we turned on a 1½-inch hose stream until the tank was lowered again. In this way we gradually tore the stack apart until our water supply gave out. By this time the chief had called a truck from a nearby community and we relayed water to complete the job.

"Another time a big grass fire was racing toward a barn and we arrived just as the fire was going into the barnyard and toward the edge of the straw stack. Had it reached the stack it would have taken the barn as we had only the water from our booster tank.

"This year we have put into effect a plan whereby we have a total of twelve operators for our two pieces of equipment. Each week two of these twelve are required to stay in the borough and be on hand should an alarm be received. The following week two more serve, and so on until all have put in their week. If for any reason a man must go out of town the week he is serving, he must contact either the truck foreman or myself before leaving so that we have another operator available."

"HENRY E. WALTMAN, *President*,
"Alpha Fire Company, No. 1,
"Littletown, Pa."

"I AM enclosing a copy of the new rules and regulations of our Buffalo Auxiliary Fire Corps. It has just been completed and is the outgrowth of the experience of the past two years, plus.

"As a bit of background, when the Corps started we enrolled approximately two thousand men. At the time no officers were appointed. Everyone took the prescribed training course. At the end of the first year Commissioner Turbridy, on the recommendation of Chief Becker, appointed the first officers, all men who had proven themselves in leadership, interest, and ability. At this time, only captains and lieutenants were appointed.

"Following this, insurance protection was arranged and the members of the Corps were allowed to ride the department apparatus, thus getting the very necessary field training. Also, with the decrease of manpower in our department, the auxiliaries have proved their worth at several large fires. They have the training and are anxious to pitch in and work.

"It was found that a broader scope of control was needed both at fires and in training, so last December the District Chiefs and their assistants were appointed. We act as Liaison officers between the chief officers of the department and the auxiliaries, having direct control of all auxiliaries at fires, also assisting in the training program in our respective districts.

"It is with pride and thanks that I send this along to the Association. I have been helped so much that I feel if I can contribute a bit, I have done something to forward the grand work.

"E. L. BRADY, II,
"2nd District Chief,
"Buffalo Auxiliary Fire Corps,
"Buffalo, New York."

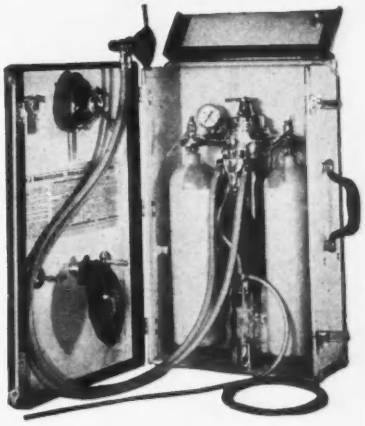
"THE V.F. is a darned good magazine and is enjoyed by myself and several fellows in the South Pacific. I read my copy and then mail it to a volunteer fireman buddy of mine in the SeaBees. I guess it's a red letter day when he gets it. I understand the Marines, Navy, etc., crowd around to look it over.

"BOB SCHOOLEY,
"Grinnell, Iowa."

E & J RESUSCITATORS BUILT TO SAVE LIVES

★

These modern automatic breathing machines are also built to stand up under years of the kind of service required by Fire Departments.



★

SUPERIOR QUALITY THROUGHOUT

When you inspect the interior mechanism of an E & J Resuscitator you will know why they have such a long record of dependable and successful performance in saving lives. This close study of an apparatus upon which so much depends will demonstrate why E & J Resuscitators are the accepted standard of quality, precision workmanship and effectiveness in mechanical artificial respiration.

YOUR RESCUE SERVICE IS NOT COMPLETE WITHOUT MECHANICAL RESUSCITATION—AND THIS MEANS "E & J" IF YOU WANT THE BEST

E & J MANUFACTURING CO.

GLENDALE, CALIFORNIA

Drexel Bldg. Philadelphia | **17 East 42nd St. New York City** | **530 Fernando St. Pittsburgh** | **581 Boylston St. Boston**

4448 W. Washington Chicago | **3032 W. 25th Ave. Denver** | **3900 Grandy Ave. Detroit**

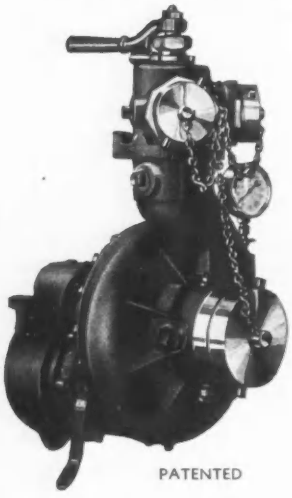
Pioneers and Specialists in Mechanical Artificial Respiration

Barton-American
Front Mounted

AMERICAN-MARSH PUMPS

Barton-American
Midship

FIRE APPARATUS CENTRIFUGAL PUMPS



PATENTED

FRONT MOUNTED FOR EASE OF OPERATION

AUTOMATIC VACUUM PRIMER

HIGH PRESSURE AT LOW ENGINE SPEED

BOOSTER TANK OPERATION WITH TRUCK IN MOTION

Offered in capacities from 250 to 600 G.P.M.

AMERICAN-MARSH PUMPS, INC., Battle Creek, Michigan

Pumps—and pumps only—since 1873

ATLAS LIFE NETS

Have won the right to leadership by their successful record of service in the field of action and in the training schools. The best recommendation we have is the re-orders we get. Special exclusive features give extra strength and add safety. For life saving operations, only the best should be used. Specify ATLAS.

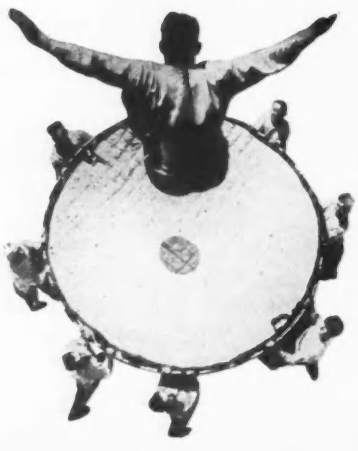
ATLAS

LIFE BELTS

STANDARD: An extra heavy web belt, strongly reinforced with leather and furnished with steel cadmium-plated hook.

POMPIER: Fitted with ATLAS forged steel hatchet, leather life rope loop and attachments for carrying small tools.

HAND BRAKE BELTS: light in weight, equipped with comfortable grip on brake and constructed to prevent hand slipping.



Detailed Information Upon Request

ATLAS SAFETY EQUIPMENT CO., Inc.

26 Warren St. ★ New York 7, N. Y.

Effects of Fire on Grazing Lands

THE following report from the February News Letter of the California Division of Forestry serves to call attention to the fact that the burning over of grass lands in the spring and early summer is likely to hinder the growth of new grass. This fact may be of some value to fire officials attempting to discourage promiscuous burning of fields and grasslands.

"Close upon the heels of fire season several interesting observations have been made in Madera County on the effect of last summer's fires on foothill type of grazing land.

"It has been noted that on areas burned off early in the summer — May, June and the first of July — the new grass is very slow to start. Also noted is the prevalence of noxious weeds starting in these areas. The grass in the burns is sparse and very short.

"Undoubtedly the grass seed was burned before it matured and disseminated. Thus the majority of the potential grass crop was ruined, while the hardier weed seeds persisted and promptly germinated. It probably will be several years before a normal crop of grass is again available.

"On range land not burned, the new grass crop seems far advanced over the early season burned areas. The unburned grass seeds allowed to disseminate naturally produced a normal grass crop.

"Range land burned just before the close of fire season in November, which, by the way burned quite hotly, has the heaviest and most advanced crop of grass so far. Could it be that old grass burned off after the seed had fallen gave the new grass an added push? More sun on the new grass may have added its growth, too.

"It is entirely possible that the above observations apply only to Madera County and not to other sections of the State (California). This point is open to discussion.

"It would seem most advantageous to protect these range lands from fire for at least two, if not more, reasons. First, protection of feed for livestock; second, the long range viewpoint of the encroachment of weeds into pure grass type areas. Illustrating this are the tarweed areas so prevalent in the lower Sierra region. — Arnold F. Wallen, Assistant State Forest Ranger."

New Text

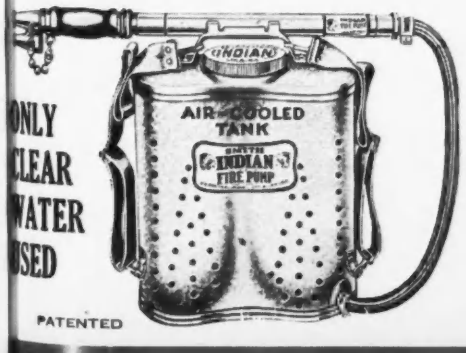
THE Proceedings of the airplane crash fire-fighting conference held at Memphis, Tenn., on January 10th, in cooperation with certain interested N.F.P.A. technical committees and the Army Air Corps, is being published by the N.F.P.A. At the insistence of the Army Air Corps attendance at the conference was strictly limited but most of the information exchanged has now been approved for publication. N.F.P.A. members including member fire departments may obtain a copy of these proceedings without charge by writing to the N.F.P.A. Executive Office. A limited supply of additional copies will be available at a cost of twenty-five cents per copy.

FIRE 'N PUMP *The "Injun" House Twins* by D. B. SMITH & CO.

DO YOU REALIZE THAT YOUR BEST MOVE IS TO ORDER MORE INDIAN FIRE PUMPS?
BECAUSE THEY GET THE JUMP ON AN INSIDE OR OUTSIDE FIRE WITHOUT LAYING A SECTION OF HOSE!

INDIAN FIRE PUMPS

ARE YOUR "BEST" BET for INSIDE OR OUTSIDE FIRES! *Order Now...*



INDIAN FIRE PUMPS give you the biggest value for your money of any fire extinguisher on the market. They use only clear water — which costs nothing. They carry slung on the back enabling operator to get about quickly without having to stop to pick up the fire pump. Easy pumping throws 30 to 50-foot stream. Tank is air cooled to prevent dampness reaching carrier's back. **INDIAN FIRE PUMPS** are just what you need for grass, rubbish, roof, building and room fires. Be sure you have plenty of **INDIAN FIRE PUMPS** this spring. Order now.

D. B. SMITH & CO. • 412 Main Street • UTICA 2, NEW YORK

PACIFIC COAST BRANCHES: Hercules Equipment & Rubber Co., 455 Brannan Street, San Francisco, California
Ray C. Davis Co., 617 East Third Street, Los Angeles 13, California — Carco-Cowhit Co., 520 SW Pine Street, Portland 4, Oregon
Mill & Mine Supply Co., 2708 6th Avenue, South, Seattle, Washington — The Cowhit Co., Klamath Falls, Oregon

How a Small Volunteer Department Was Organized

By F. W. Dalton

Lecturer in Industrial Education, University of Michigan

LELAND is a small northern Michigan town of 500 native inhabitants. This population is swelled to 1,500 during the summer as a result of the "Resorters" as they are known by the natives. Here is found a volunteer fire department they believe to be one of the finest in the country, considering the size of the community. In the early 30's several disastrous fires occurred, one of which consumed the local hotel, post office, store and some residences. It appeared to many that a repetition of this catastrophe would wipe out the entire commercial center of the town. At that time the only available fire-fighting apparatus was whatever buckets that could be procured from the local stores. This condition led to a meeting of a few public spirited citizens for the purpose of seeing what could be done about it. This meeting may be said to have marked the beginning of the development of community cooperation that carried far beyond the expectations of those responsible for it. The initial meeting resulted in three important steps: (1) a decision to "pass-the-hat" for immediate funds to procure three dozen pails to be used for fire purposes only. Since the town has water on three of its sides the "bucket brigade" could do some effective work if pails were always available; (2) Plans for receiving donations for the purpose of purchasing two forty-gallon portable soda acid tanks with wide wheels so that they could be pulled by any automobile; (3) A tentative plan was arranged for the organization of the L.V.F.D. Subsequent meetings resulted in the establishment of the organization with regular officers. It became the initial function of these officers to study the situation, determine what could be done with present equipment, canvass the locality for volunteer firemen and suggest methods of obtaining funds.

AFTER the officers had had an opportunity to follow through on the above objectives a plan of inspection was devised and a course of instruction was inaugurated for the purpose of acquainting local citizens concerning fire hazards and encouraging the use of fire-fighting equipment. This campaign resulted in the purchase by almost every citizen of hand fire extinguishers. These extinguishers are periodically inspected by a member of the fire department.

The results obtained with the "natives" led the officers to invite the co-operation of the summer people which was very readily forth-coming. The revised plan of organization that was worked out included every home owner in the entire community, and all others who desired to become a member of the L.V.F.D. The annual fee is $2.00. Of course, it has been understood that no member was limited to the $2.00 fee. Donations were acceptable and some substantial donations were made, quite largely as a result of some effective service rendered by the department.

With the funds accumulated as a result of the dues and donations, additional equipment was purchased to augment the buckets and soda-acid tanks. The growth of the department resulted in the successful fighting of three fires that could have been tragic. These successes brought forth more donations, particularly from those whose property had been saved. With the funds thus available two important steps were taken; (1) the purchase of a soda-acid truck, ladders, hose and other necessary accessories; (2) the local township board was induced to provide housing for the equipment.

AT this point it is well that the reader be reminded that a guiding spirit is necessary in any such undertaking; this community had this in abundance in the person of Mr. Ernest VanZee, affectionately known to everyone as "Ernie." "Ernie" is particularly qualified to head an organization such as this one; his all-around ability as a mechanic, his sincerity, whole-hearted enthusiasm and community pride has made a reality out of what was considered impossible.

After Chief Ernie had convinced the township board that the town and county building would receive added protection if they built a suitable fire station close to it, he also persuaded them to heat it. This made it possible for the "Chief" to obtain permanent quarters above the station where he carries on his vocation of repairing electrical appliances. As a consequence, he is always on the spot, night and day, in case of any alarm. Incidentally, securing the cooperation of the Northern Public Utilities Company, the chief installed a complete alarm system. Fire boxes are conveniently located throughout the community and are so arranged that when a box is pulled, the siren signals the location of the fire by code blasts.

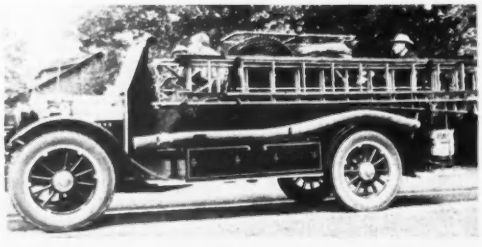
The next important contribution by the chief, whose salary is $100 a year, was a complete overhauling of the soda-acid truck. This he converted into a service truck and pumper having a booster tank and all the accouterments appertaining to such a unit (see photo below). This pumper truck has a 500-gallon per minute front-mounted pump and carries equipment that compares favorably with that of similar small modern fire trucks.

At weekly meetings the unpaid volunteers led by the chief began a study of the problems of fire fighting, including first-aid, inspection, study of every building in the community including dwellings, the carrying on of special drills, and the accumulation and study of good material on the subject of fire fighting. These regular meetings also resulted in the adoption of a constitution and by-laws, and the manufacture of ladders and other pieces of fire-fighting equipment.

The village is somewhat isolated, being practically surrounded by water. Therefore natural "hydrants" are quite handy. The farming district that extends beyond the lakes is not so fortunate. However, to the farmer has been extended the co-operation of the department. As a consequence farmers have been encouraged to install large (100–150 bbl.) cisterns at a reasonable distance from buildings so that with the hard suction hose provided, pumper protection is available on the farms. In many cases as many as three cisterns have been installed on a farm. Many farms also have electric pumps. The department has provided a hose attachment so that the water can be supplied from the farm pump to the pumper's booster tank while the pumper is in action.

Since the inauguration of the department, no disastrous fires have resulted. The department is financially sound on a volunteer basis; insurance rates have been adjusted downward; and new modern equipment is being added as conditions permit. To some, the type of men on the original committee whose efforts inspired this fine piece of community cooperation, may be interesting: Ernest VanZee, now fire chief; E. L. Dalton, county clerk; Col. Carl Detzer, an author now serving with the armed forces; Jake Schwarz, president of the Chamber of Commerce; and J. Elder Blackledge, nationally known magician.

Perhaps one of the most noteworthy results of the efforts of this committee was the fact that having first succeeded so well with the fire department, other worthwhile community projects have been accomplished with equal success and dispatch.



This little pumper packs a good assortment of equipment needed for rural fire fighting including a 500 g.p.m. front mounted pump. Note the generous supply of ladders and buckets that would come in handy at a farm fire.

*Keep your extinguishers in shape . . . FREE BOOK tells how!

WHEN fire breaks out, there's no time to repair or recharge extinguishers — they must be ready to hit the blaze fast! So the logical time to keep the equipment in fighting form is *before* the emergency . . . by systematic inspections at fixed intervals.

A method for setting up an extinguisher maintenance system in your organization is outlined in a booklet prepared by Walter Kidde & Company. It covers *all* types of equipment, tells exactly what to check on each type, how often to examine and recharge. It shows how extinguishers should be placed and marked, how records should be kept. This book "Inspection and Maintenance of First Aid Fire Extinguishers", will be sent you upon request. Write for your copy.

WALTER KIDDE & COMPANY, INC., 449 MAIN STREET, BELLEVILLE, N. J.

THIS ADVERTISEMENT IS ONE OF A SERIES APPEARING CURRENTLY IN INDUSTRIAL PUBLICATIONS

800 LBS. AT THE PUMP

You can't get the Super FMC Fire-Killing Fog without High Pressure (800 lbs.)

FMC HIGH-PRESSURE PUMP THAT HAS REVOLUTIONIZED MODERN FIRE-FIGHTING TECHNIQUE

Fight your fires the modern way —*with fog. You must have* high pressure. At least 800 lbs. at the pump—600 lbs. at the gun!

The reason? To cool and smother flame effectively, you need a combination of *finely-atomized* fog and high velocity resulting from FMC 600 lb. gun pressure. Every droplet of water must be broken up into thousands of tiny particles and "blasted" into the source of the fire.

That's why there is only one FMC Fog Fire Fighter and why it is in a class by itself. The FMC High Pressure Pump provides *more than* 800 lbs. pump pressure (600 lbs. nozzle pressure) *easily* — without over-working.

800 LBS. AT THE PUMP! That's a pretty tough job for any unit. But—the FMC High-Pressure Pump has proved its ability to *deliver* and *maintain* that pressure at hundreds of fires.

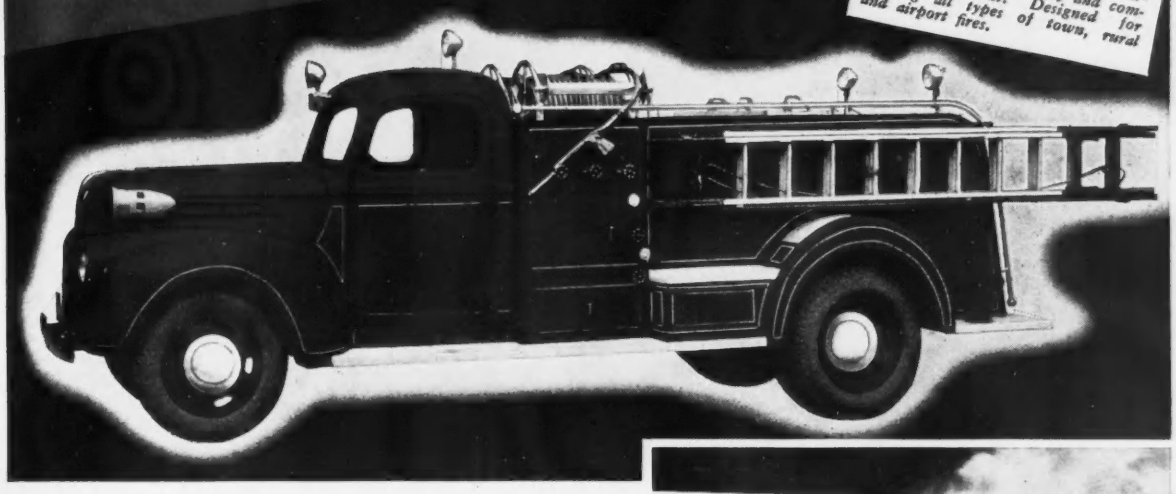
It's got "what it takes" to do its job and to carry through.

Here's why! The FMC Pump is ten years beyond the experimental stage. It is sturdy, compact and trouble-free. All parts are bathed in oil. It runs at slow speed — and last — but not least — it is designed to deliver *more than* 800 lbs. pump pressure.

Investigate! There's nothing else like it!

BUILDERS OF BEAN HIGH-PRESSURE

A *MUST* FOR HIGH-PRESSURE FOG FIRE FIGHTING



FOG FIRE FIGHTER TRUCK. *A self-contained fire-fighting unit. Carries its own water supply and complete equipment. Designed for fighting all types of town, rural and airport fires.*

Fires put out 10 times faster with little or no water damage

FMC High-Pressure Fog extinguishes fires—fast!

The finely-divided fog is "blasted" right to the fire, cools and smothers it. One gallon of this finely-atomized water properly used has the fire-quenching possibilities of 10 to 35 gallons of low pressure water.

The result? Faster quenching and practically no water damage!

Furthermore—the FMC Fire Fighter is a complete fire fighting unit. The 60 gallon pump capacity at 800 lbs. pump pressure (600 lbs. nozzle pressure) supplies two guns of 30 gallons each. The 600 lbs. nozzle pressure and the 30 gallons discharge capacity are so well balanced that it is a one-man gun.

Get the Facts on *Real* fog fire fighting from the John Bean Mfg. Co., Lansing, Mich., or the Bean-Cutler Division, Food Machinery Corporation, San Jose, California.

FOG AT WORK! *This test fire started in building filled with boxes and furniture. Fireman using straight fog stream to knock down hot fire quickly from a safe distance.*

FIRE'S OUT! *Fireman adjusts nozzle for wider fog pattern as he moves in closer. Within a few seconds, the fog has done its work on fire inside structure. Its effect can be seen from steam pouring out.*

Original

HIGH-PRESSURE FOG FIRE FIGHTER

FOOD MACHINERY CORPORATION

JOHN BEAN MFG. CO., 732 HAZEL ST., LANSING 4, MICH. • BEAN-CUTLER DIVISION, 432 JULIAN ST., SAN JOSE, CALIF.

PUMPS FOR OVER FIFTY YEARS

CAIRNS

In Regulation or Drop Brim Style, 8-Comb or Solid Top, Top Grain Solid Leather.

HELMETS

All the best features of 100 years of "know how" are incorporated, including the CAIRNS Self-Adjusting Cushion Lining that grips the head and absorbs shocks.

THE FAMOUS CAIRNS ALUMINUM HELMETS ARE AGAIN AVAILABLE. ORDER NOW TO INSURE YOUR QUOTA

We have, for immediate delivery, high-grade Turnout Coats, medium weight Rubber Boots, Fire Axes, and regulation Caps. And you'll need the Cairns Loose-Leaf Fire Record Book, the Loose-Leaf Secretary's Record Book, and Secretary's Forms, Certificates, etc.

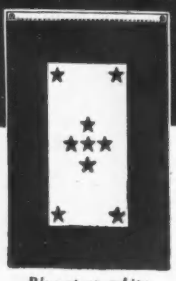
Write for Catalog 30C

CAIRNS & BROTHER

Outfitters to Firemen Since 1836

444 LAFAYETTE STREET ✦ NEW YORK

HONOR YOUR SERVICE MEN



Blue stars, white panel, field of red. Send for catalogue.

Honor your fellow-firemen now serving with the armed forces, by displaying this official

SERVICE FLAG

One star for each man in service. Available in any size or material desired. Send for Free illustrated catalogue and price list today.

Permanent

ROLL of HONOR

A permanent plaque, with individual names in silver on gold-bordered permanent name plates. Beautiful walnut plaque with eagle and victory torches. Write for price list today.

U. S. and Allied Flags in all sizes. Write for prices.

REGALIA MFG. CO.

Dept 82, Rock Island, Ill.

MANUFACTURERS' ANNOUNCEMENTS

THE Cardox Corporation of Chicago has recently issued an illustrated bulletin summarizing the features of Cardox Fire Extinguishing Systems. The bulletin illustrates various types of hazards and the type of application suitable for each. It also portrays how a single Cardox system may be designed to protect one hazard or many separate hazards. A copy will be sent you on request. Address Cardox Corp., Bell Building, Chicago 1, Illinois.

HARVE FISCHMAN, above right, now can add fire engine lore to his knowledge of world history during his regular Sunday night appearances on the coast-to-coast Quiz Kids broadcasts. Harve was in New York recently on a war bond appearance and asked to see fire engines being built. Fred W. Beardslee, left, manager of fire engine sales for Mack Trucks, Inc., obliged by taking the Quiz Kid on a tour of Mack's Long Island City plant. Here he is explaining the fire engine's pumping system to the attentive Harve.

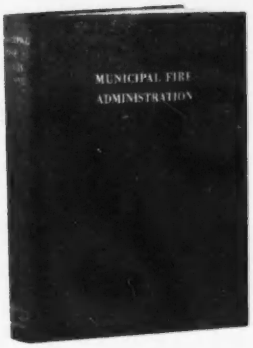
AT the annual meeting of the Chemical Fire Extinguisher Association held March 3 at the Hotel Sherman, Chicago, Ill., Arthur G. Sullivan, of the Buffalo Fire Appliance Corporation, was elected President succeeding Everett A. Warren, of the General Detroit Corporation. J. O. Binford, General Sales Manager of the American-LaFrance-Foamite Corporation, of Elmira, N. Y., was re-elected Vice-President. H. W. Diener, of Geo. W. Diener Manufacturing Co., of Chicago, Ill., was chosen Treasurer, and W. J. Parker, Commissioner. George W. Boucher of Pyrene Manufacturing Co. of Newark, N. J. and Mr. Warren were elected to serve on the Board of Directors with the above-mentioned officers.

INDEX TO ADVERTISERS

	Page
Akron Brass Mfg. Co., Inc.	13
American-Marsh Pumps, Inc.	20
Atlas Safety Equipment Co.	20
John Bean Mfg. Co.	24–25
Buffalo Fire Appliance Co.	27
Cairns & Brother	26
Circul-air Corp.	17
C-O-Two Fire Equipment Co.	3
E. & J. Manufacturing Co.	19
J. H. Emerson Co.	16
Federal Electric Co., Inc.	18
Fog Nozzle Co.	2
The Gamewell Co.	28
Institute for Training in Municipal Administration	26
Walter Kidde & Co., Inc.	23
Mack Manufacturing Corp.	4
Mine Safety Appliances Co.	17
Midwestern Manufacturing Co.	18
National Foam System, Inc.	15
Regalia Manufacturing Co.	26
D. B. Smith & Co.	21
Ward LaFrance Truck Division	9

When you write to advertisers, please mention VOLUNTEER FIREMEN

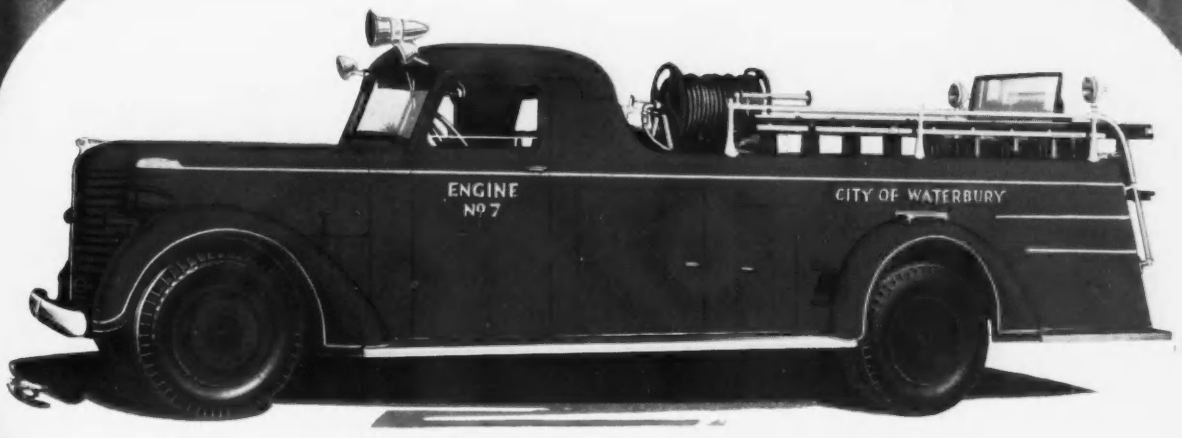
CORRESPONDENCE COURSE IN MUNICIPAL FIRE ADMINISTRATION



The text is furnished as part of the $35 fee covering the complete cost to a student of the course. This fee includes the review and correction of lesson papers. In no way can men studying for promotion in a fire department receive a more complete understanding of fire department operations and administrative problems.

INSTITUTE FOR TRAINING IN MUNICIPAL ADMINISTRATION

1313 East 60th St. Chicago 37



Buffalo 750 Gallon Triple, with all steel 3 man cab
as built for Waterbury, Conn.

SAFE

COMPLETE VISION WINDSHIELD

BUFFALO FIRE APPLIANCE CORPORATION
BUFFALO . . . . NEW YORK

WHY DELAY ALARMS?

Plan Now to Improve Your Fire Defenses

100 RECENT LARGE LOSS FIRES IN THE SMALLER COMMUNITIES

	Loss
Carbondale, Ill.	$ 740,000.00
Paris, Texas	41,000.00
Sorel, Quebec	300,000.00
Santa Ana, Calif.	70,000.00
Beardstown, Ill.	11,000.00
Philippi, W. Va.	135,000.00
Mayfield, Kentucky	240,000.00
East Sidney, Ohio	575,000.00
Pelham, S. C.	275,000.00
Altadena, Calif.	500,000.00
Minot, North Dakota	223,000.00
Ipsilanti, Mich.	55,000.00
Naples, New York	500,000.00
Osborn, Missouri	30,000.00
Marion, Virginia	1,250,000.00
Nunda, New York	75,000.00
Buchanan, Virginia	100,000.00
Rego Park, New York	60,000.00
Heppner, Oregon	50,000.00
Dawson Creek, B. C.	350,000.00
Wytheville, Virginia	100,000.00
Glasgow, Kentucky	100,000.00
North Kansas City, Mo.	540,000.00
Yukon, Pennsylvania	250,000.00
Bishopville, Md.	300,000.00
Bay Head, N. J.	100,000.00
Saginaw, Texas	1,000,000.00
Delaware Township, N. J.	560,000.00
Olney, Illinois	65,000.00
Oxford, Ohio	22,000.00
Green Island, N. Y.	300,000.00
Warrenton, Ore.	90,000.00
Bauxite, Ark.	25,000.00
Carman, Man.	27,000.00
Sweet Home, Ore.	185,000.00
Cairo, Illinois	1,653,000.00
Arthur, Illinois	150,000.00
Cloquet, Minn.	38,000.00
Noblesville, Ind.	55,000.00
North Kansas City, Mo.	270,000.00
Tomah, Wash.	250,000.00
Las Vegas, Nev.	50,000.00
Laurens, S. C.	250,000.00
Nicholson, Pa.	135,000.00
Hebertville, Que.	218,000.00
Elkton, Md.	20,000.00
Great Bend, Kans.	153,000.00
Wallington, N. J.	250,000.00
Detroit Lakes, Minn.	50,000.00
Wilmington, Calif.	75,000.00
Gainesville, Texas	60,000.00
Middle Amana, Iowa	250,000.00
Oleum, California	200,000.00
Cushing, Okla.	180,000.00
Newton, Iowa	245,000.00
Zeeland, Mich.	50,000.00
Corvallis, Ore.	60,000.00
Calypso, N. C.	54,000.00
Dallas, Oregon	50,000.00
Cushing, Okla.	82,000.00
Marysville, Mich.	325,000.00
Mt. Pleasant, Mich.	100,000.00
Ridgefield, Wash.	150,000.00
Mowich, Ore.	50,000.00
Reyno, Ark.	63,000.00
Lake View, Ore.	100,000.00
Collingswood, N. J.	55,000.00
Bingen, Wash.	50,000.00
Ozark, Ark.	500,000.00
Canon City, Okla.	100,000.00
Nenah, Wisc.	100,000.00
Milton, Del.	38,000.00
Ontario, N. Y.	200,000.00
Lucasville, Ohio	820,000.00
Doylestown, Pa.	50,000.00
Oxford, Nebr.	75,000.00
Lawrenceville, Ga.	50,000.00
Middlefield, Ohio	108,000.00
Bellefontaine, Ohio	800,000.00
Springfield, Ore.	100,000.00
Ridgefield, Wash.	150,000.00
Pullman, Wash.	200,000.00
Prineville, Ore.	75,000.00
Oxford, Nebr.	75,000.00
Ashland, Ohio	345,000.00
Moorpark, Calif.	1,000,000.00
Petersburg, Alaska	100,000.00
Pelham, S. C.	100,000.00
Dallas, Oregon	100,000.00
Penn Yan, N. Y.	500,000.00
Wellington, Kansas	300,000.00
Neenah, Wisc.	44,000.00
Mangolia, Miss.	75,000.00
Therford Mines, Que.	75,000.00
Frederick, S. C.	25,000.00
Lock Haven, Pa.	26,000.00
Alburnett, Iowa	50,000.00
Belmont, Ont.	250,000.00
Reading, Ohio	362,000.00
North Hollywood, Calif.	50,000.00

(Reprinted by permission from N.F.P.A. publication "Fires in the Second Year of the War")

Adequate Protection is the Price of Safety

THE FIRE ALARM SYSTEM

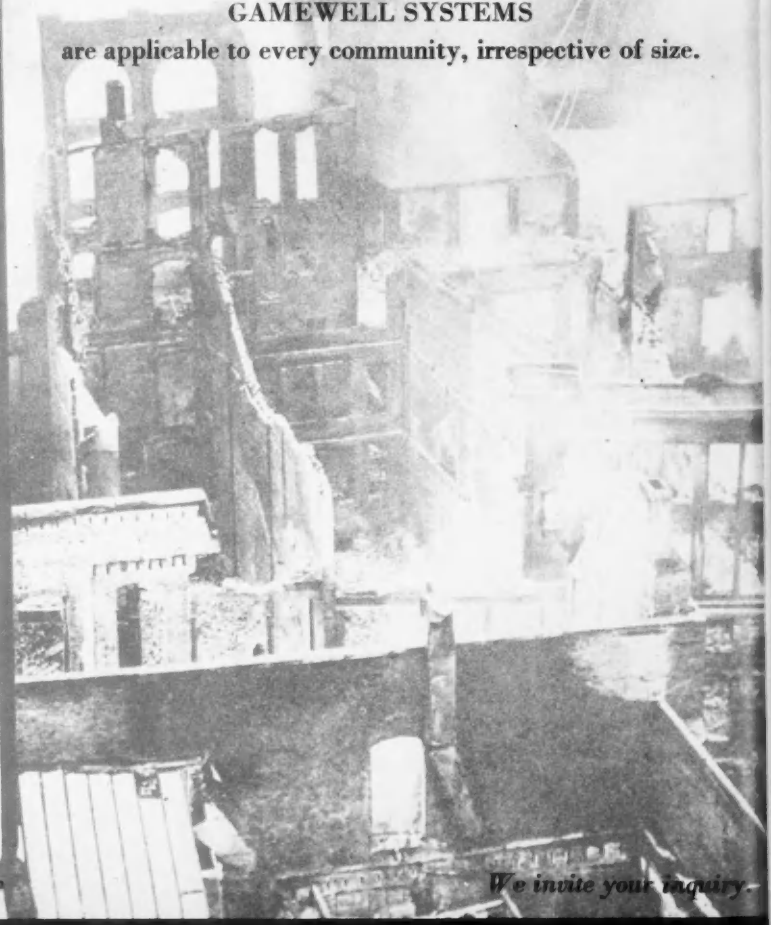
as Designed and Manufactured by

GAMEWELL

Provides the means for Eliminating Delay and its ever attendant Fire Waste!

GAMEWELL SYSTEMS

are applicable to every community, irrespective of size.



We invite your inquiry-

THE GAMEWELL COMPANY

Newton Upper Falls, Massachusetts